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Original Articles.

DISPENSARY DEVELOPMENT, WITH ESPECIAL REFERENCE TO THE OUTPATIENT DEPARTMENT OF THE MASSACHUSETTS GENERAL HOSPITAL.*

BY PAUL D. WHITE, M.D., BOSTON.

1. *Introduction.* One of the most fascinating fields in the history of mankind is that of the development of knowledge of the human body and of its diseases and their treatment. For physician, nurse, medical student, and the lay public itself, the history of medicine is full of inspiration. A page or two of the story of medical progress during the past century comes from the Massachusetts General Hospital, one of the most vital parts of which has been and is, more and more, the Outpatient Department. I wish to outline in brief the growth of dispensaries in general and of this dispensary in particular. We can all do better work if we know more of the history of the workshop and of its weak as well as of its strong points. My chief help in the preparation of this account has come from the annual reports of the trustees of the hospital; I acknowledge with great pleasure, also, the assistance of Dr. Coolidge, Mrs. Myers and Miss Cannon, and of Dr. Cabot for my visit to the dispensaries of various cities a year ago.

*Read at a meeting of the Out-Patient Department Staff, Massachusetts General Hospital, November 30, 1921.

2. *Dispensaries in General.* The first historical account of the practice of medicine has been given to us by Herodotus. In describing the beginnings of medicine in Babylonian times, more than two thousand years before Christ, he wrote: "They bring out their sick to the market place, for they have no physicians; then those who pass by the sick person confer with him about the disease, to discover whether they have themselves been afflicted with the same disease as the sick person, or have seen others so afflicted; thus the passers-by confer with him, and advise him to have recourse to the same treatment as that by which they escaped a similar disease, or as that they have known to cure others." Finally, as time went on, physicians developed in Babylon until eventually, as with the Egyptians, there was a special doctor for every disease.

Several centuries before Christ there existed in a little plain in Argolis, in Greece, near Epidaurus, a sanctuary of Æsculapius. Its chief purpose was to provide aid—divine and human—to cure disease. It was a large spa. To it people flocked from all Greece. Hotels and camps housed the sick who were taken to the dispensary for treatment. On some of the votive columns are engraved still the diagnoses of some of these cases. Paralysis of one hand, blindness in one eye, a foreign body (spear point) in the jaw, ulcer of the stomach and empyema were all reported as cured. Many of the patients remained for a short while in the

hospital to receive the prayers of the priest-doctors and the ministrations of the pet snakes. If they were likely to die, however, they were taken outside of the sanctuary—thus their mortality figures remained very low. In the course of a tour of inspection of the military and civilian hospitals of the Peloponnesus two years ago, I had the opportunity of visiting this famous hospital center of Epidaurus. The ruins are still imposing and will long outlast those of many of the sanatoria of modern times.

There was little, if any, advance in hospital or dispensary development under later Greek and Roman rule, and it remained for the Mohammedans in Egypt, Syria and Persia to build up the dispensary in the Middle Ages. Garrison states that "as early as 707 A. D. the Caliph El Welid had founded a hospital at Damascus. Another was established at Misr in Egypt in 797, another at Cairo in 874, two at Bagdad in 918, and two others in the same city in 925 and 977. In course of time dispensaries and infirmaries existed in all the important cities of the Eastern Caliphate, and about 1160 a Jewish traveler found as many as sixty of these institutions in Bagdad alone. The largest and best appointed of the Mohammedan hospitals were those founded at Damascus (1160) and Cairo (1276). In the former of these, treatment was given and drugs dispensed free of charge for three centuries. As late as 1427, it was said its fires had never been put out since its opening. The great Al-Mansur hospital of Cairo was a huge quadrangular structure with fountains playing in the four courtyards, separate wards for important diseases, wards for women and convalescents, lecture rooms, an extensive library, *outpatient clinics*, diet kitchens, an orphan asylum and a chapel. It employed male and female nurses, and had an income of about $100,000." "The Bagdad Caliphate was especially noted for its *ophthalmic dispensaries* and lunatic asylums." The gradual and belated development of hospitals and dispensaries in Europe towards the end of the Middle Ages owed much to the Mohammedan school of medicine. The better part of the European pharmacopeia for centuries was made up of the Arabian and Egyptian materia medica.

Very little further progress in dispensaries was made, however, until at the end of the seventeenth century London was aroused by the great need of medical treatment for the poor. In 1687 the College of Physicians of London voted to give its services to the poor without charge, but Apothecaries' Hall would not lower its prices for drugs. Finally, on December 22, 1696, fifty-three leaders of the College of Physicians signed an agreement to pay to Dr. Thomas Burwell, one of their number, ten pounds apiece for medicines, and the first Dispensary in the English-speaking world was opened, in the building of the College of Physicians. It was nearly one hundred years later before other dispensaries were begun in London. There were five in 1801, and fifty thousand poor were relieved annually through these, one-third of the patients being visited in their own homes.

In the United States the first dispensary was established in 1786 on Independence Square in Philadelphia. The second was opened in New York in 1790, and in Boston, in 1796, the third was begun—the Boston Dispensary—on the spot where Thompson's Spa now stands. In September, 1796, the Committee of the Boston Dispensary said,* "It having been found by experience, both in Europe and in several of the capital towns in America, that dispensaries for the medical relief of the poor are the most useful among benevolent institutions, a number of gentlemen propose to establish a public Dispensary in the town of Boston, for the relief of the sick poor; which they presume will embrace the following advantages:—

"1. The sick, without being pained by a separation from their families, may be attended and relieved in their own houses.

"2. The sick can, in this way, be assisted at a less expense to the public than in a hospital.

"3. Those who have seen better days may be comforted without being humiliated; and all the poor receive the benefits of a charity, the more refined as it is the more secret."

"The early Boston Dispensary consisted merely of a drug store, with a physician who was to be in attendance daily except Sundays. Ambulatory cases might see him there at eleven o'clock. Patients too sick to come for treatment were to be visited at their homes." Dr. John Fleet was the first physician of the Boston Dispensary; he treated eighty patients during the first year. As the city grew, more physicians were added, the city being divided into districts. Oliver Wendell Holmes was a district physician at one time; he repeatedly insisted on the great value to the dispensary of giving student instruction. Students were associated with the Boston Dispensary as early as 1827. Regular clinics as we know them today were not opened, however, until 1856, ten years after the establishment of the Outpatient Department of the Massachusetts General Hospital.

Further development of dispensaries in the United States was very slow after the first three were started just prior to 1800. Even in 1900 there were but one hundred, it is claimed, in the entire country. In the last twenty years they have spread like wildfire. In 1917 there

*Davis, M. M., Jr., and Warner, A. R.: "Dispensaries, Their Management and Development." New York, 1918.

were over five hundred clinics or dispensaries in the United States for tuberculosis alone.

3. *Early days of the Outpatient Department of the Massachusetts General Hospital.*—This hospital, planned early in the nineteenth century, received its first inpatients just one hundred years ago. In my search through the trustees' reports of its early years I find no mention of the time when ambulatory cases were first seen and treated as outpatients. Already in 1828 mention had been made of the hospital's service to the community in loaning surgical apparatus to patients outside the hospital, but the first note as to the Outdoor department appears in 1844 (April 17), and reads as follows: "Messrs. Rogers and Amory were appointed a committee as to physicians charging fees to patients able to pay, who subsequently reported in favor of the same in case of outdoor patients." On October 16, 1846, the very day of the first public demonstration of ether anesthesia in a surgical operation, it was voted that books be "ordered to be kept as a record of all outdoor patients." Thus the official opening of the Outpatient Department of the Massachusetts General Hospital occurred on the first Ether Day. Probably for at least a dozen years previously a few patients had been seen each year by the medical and surgical staff and treated without admission to the wards as house cases.

OUTPATIENT RECORDS.

The early records consisted simply of a line in a large notebook for each patient's name, age and symptom or disease, with sometimes a few words as to treatment. In the basement of Ward I, I found some of these old record books, the earliest one in a rather hurried search dated 1862. As the Outpatient Department developed, more lines were devoted to each patient, until in about 1890 four entire lines across both pages of a large notebook were reserved for each case, but these four lines had to suffice for later visits as well as for the first one. At the beginning all cases were entered in one book; when there was a separation into medical and surgical departments in 1863 two books were used. Finally, as each new special department was added, its own book, and later its own card system, was inaugurated. The books continued to be used until August 15, 1898, when the first outpatient card system was begun. These double cards were used until August 1, 1903, when the present larger single cards were introduced, stored in folders in special files in a central record room. This system, a vast improvement on the old, was copied extensively throughout the country. These cards still prove effective, provided records on them are carefully kept. The greatest fault with them, aside from careless records that may be entered on them, is that they are not enough associated with the house record system. An ideal arrangement would be a central record room, with uniform loose-leaf records for both house and Outpatient Department, such as exists at the Harriet Lane Hospital for Children at Johns Hopkins under Dr. Howland. Under present conditions here, if an outpatient case is admitted to the house the outpatient record is abstracted by student or house officer and entered at the beginning of the house history. When the patient is discharged to the Outpatient Department from the house a satisfactory summary is made out by the house officer on a card the size of the Outpatient record card and including statements about the course and treatment of the patient while in the ward, with laboratory data, x-ray and special consultants' opinions and advice as to the future. This card is sent to the Outpatient Department to await the arrival of the patient, whether he is a new or an old case there. It is obvious from this brief discussion that much time is lost and material duplicated in copying and abstracting records from both directions in the absence of a central record system. Finally, with regard to records, I was much interested last autumn, in my visits to various dispensaries in the country, to examine their record forms. Sometimes very elaborate printed forms of many pages were in use in clinics—these were almost universally incomplete when actually put to use—there was not time to fill them out and much paper and filing space were wasted. The simpler records were always preferable except where special studies of special groups of cases were in progress. An example of this latter type of record is that proposed by the Association for the Prevention and Relief of Heart Disease in New York for the careful statistical study of heart disease. I should not recommend that for general use in our clinics any elaborate printed forms be employed. It may be that simple printed forms, a step beyond the blank card, are advisable. The general employment of stenographers I believe to be at present rather a luxury in a teaching clinic where the students are learning to take proper histories and to record physical examinations.

STAFF.

To turn from the records to the staff, I have found that on May 23, 1858, "Dr. Benjamin Shurtleff Shaw was by ballot elected Resident Physician and Dr. Samuel L. Abbott Physician to Outdoor patients at the Hospital, in conformity with the new arrangement of offices and distribution of duties which had been approved by recommendation of the Committee on the Internal Administration of the Hospital." Thus Dr. Abbott was the first O. P. D. physician. He saw medical, surgical and all

kinds of special cases. He could, of course, and did call in consultation the medical and surgical staff of the hospital as the need arose. Undoubtedly before his appointment the outpatient cases were seen and treated by the house staff. The steadily increasing number of outpatient cases had necessitated the change. In 1847, the first entire year that records were kept, 328 patients were treated in the Outpatient Department; in 1848, 378; in 1850, 294; in 1855, 645. In 1859 "the number of Outpatients treated was 3,165. Of these, 1,104 were surgical and 2,061 were medical." The report for the year states that "most of them were supplied with medicine, bandages, splints, and other surgical apparatus. Teeth have been extracted, likewise, for a large number of people, estimated at about 500. This class of patients has been rapidly increasing in numbers during the past few years. They come not merely from the immediate neighborhood, but from all parts of the city and adjoining towns."

Another quotation from the report of 1862 is as follows: "Besides these House-patients, there have been 4,975 applications from 'Outpatients;' 4,800 of whom were treated and 175 not treated. These patients call daily, or as often as is needful, at the Hospital, and receive medical and surgical advice and assistance. By means of this arrangement, the beneficent work of the Institution is widely extended, and a vast amount of disease and suffering is prevented because many receive advice and medical aid during the earlier and curable stages of disorder who, without such opportunity, might delay until they become severely sick, and perhaps past cure." This extract sounds like one from the recent writings of Sir James Mackenzie, but it is dated 1862.

In 1863 the trustees reported that "Dr. Abbott, who has for so many years filled the position of physician to outpatients with untiring fidelity, and whose report, being entirely statistical, is embodied in the accompanying tables, states that the whole number of applicants has been 5,214, of whom but 227 were not treated, while 1,590 prescriptions were furnished without charge. When it is considered that ten years ago there were but 358 outpatients, it will be seen what an important branch of the hospital this dispensary department has become. The medical cases, which exceed the surgical by nearly three to one, have been almost exclusively treated by the physician in person, while the surgical cases have come under the charge of the visiting surgeons. As the latter have their time greatly occupied by their house duties, and as they would still be able to lend their advice and skill in matters of importance, it may hereafter be deemed advisable, with their concurrence, to appoint a surgeon to outpatients."

Dr. Algernon Coolidge, father of our Dr. Coolidge, was so appointed in 1864. And in 1867 another physician was added, making a staff of two physicians and one surgeon. Gradually, as the years went by, more physicians and surgeons were appointed to the Outpatient Department, until in 1882, just before there was opened a special Outpatient building, there were six physicians and three surgeons, not including the physicians to the special departments.

In 1868 a special dental service was instituted in the Outpatient Department, but it was not until 1873 that there was an Outpatient dentist officially appointed. He was Dr. Wilson. In 1869 a skin clinic was the second of the special departments to be inaugurated. Dr. J. C. White was appointed to take charge of this clinic. It is said that much discussion was necessary before the hospital staff would agree that the skin clinic would be worth while. In 1872 two more special departments were begun, the nerve clinic under Dr. James J. Putnam and the throat clinic under Dr. F. I. Knight. In 1873 the fifth special clinic, that for ophthalmology, was begun under Dr. Wadsworth, but no further special departments were added until 1887, when Dr. J. O. Green was appointed aural surgeon.

A few statistics for 1873, nearly 50 years ago, may be of interest. At this time the total number of beds in the hospital was 215. Altogether there were 13,517 outpatients, averaging two visits apiece. The daily average was 87. Of the 13,517 cases, 6,922 were Americans and 6,595 foreigners; 8,565 were residents of Boston and 4,952 of other places; 2,820 belonged to the Female Medical, and 2,529 to the Male Medical and Children's Department (in those days men and children were seen in the same clinic). The surgical clinic numbered 3,109; the dental was the largest with 3,709. The skin was the biggest of the other special clinics with 844 patients for the year, the throat department next with 320 patients; 157 cases visited the nerve clinic and 29 the eye clinic, which had just opened. The comments in the Trustees' Report for this year were that "the importance and usefulness of this department of the Hospital are constantly increasing. The time and attention given by the officers connected with it makes it practicable to treat many patients without admitting them, or with a very brief stay in the house, who would otherwise occupy the beds." This increases the expenses of the Outpatient Department, "but the usefulness of the whole Institution is proportionally progressive." *These observations are very important, for they apply just as surely at the present day as at that time.* Not only for treatment but for study to establish a correct diagnosis may a patient be followed in the Outpatient Department. Not only may the hospital beds be saved for the sickest or the

most obscure cases, but the patients themselves can often be spared unnecessary hospital expenses by keeping them in the Outpatient Department. We have, I believe, become a little too hasty in recommending cases to the wards for study.

Two interesting notes appear in the report of the Trustees for 1882. The first is as follows: "On June 16 a petition was presented to the Trustees from the surgeons in the special department for outpatients, complaining that the personal investigation of applicants instituted a year ago was depriving them of many interesting and instructive cases, and asking that all cases hereafter be admitted, regardless of the pecuniary circumstances of the applicant." The Trustees could not agree to this, of course, but did recommend "that liberal regard should be paid to the written recommendations of physicians that cases are proper ones for admission by reason of the obscurity and educational value of the disease as well as by reason of the poverty of the applicant."

The personal investigation of applicants had been carried on since 1877, when the Trustees reported that the great increase in the number of outpatients had engaged their serious attention and had led to the adoption of some measures to ascertain, so far as was practicable, how large a proportion of the applicants were of the class properly entitled to such relief. During the greater part of the year a person had been employed to ask a small fee from all applicants who seemed to be able to pay something, and to investigate the circumstances of all who came regularly for treatment. The result of these inquiries proved that a large proportion of the patients were deserving poor.

Thus as early as 1877 a charge for admission to the Outpatient Department had become a routine measure. Very small at first, it has been increased, until now for adults the charge for each visit is 50 cents, if it can be afforded. In my dispensary trip last autumn there was but one other Outpatient clinic that I visited which I found to be self-supporting. That was the Mayo Clinic in Rochester, Minnesota.

The second item of interest in 1882 was that "a friend of the late Dr. George H. Gay has given us $25,000 as a memorial of him. After full consideration, the Trustees voted to apply the money for a building for the Outpatient Department, believing that to be the greatest need of the Hospital. This will supply a most pressing want, as our present accommodations have long been totally inadequate for the needs of that department."

4. *1883-1903.*—In 1883 the new Outpatient Building was opened with much acclaim. It was "justly regarded as a model building," but in less than ten years it had been so much outgrown that a new story had to be added to it. This was done in 1891 at a cost of $8,000. This "model building" is the one which now houses the x-ray department below and the orderlies upstairs, but even for these purposes it is quite inadequate now.

Prior to 1883 the outpatients were seen, I believe, in the rooms in front of the second surgical amphitheatre (which later housed the Zander apparatus). This amphitheatre was erected in 1867. Prior to that date, and probably also for some time between 1867 and 1883, the outpatients were seen in some one or two of the old rooms on the ground floor of the Bulfinch Building—which ones I do not know.

In 1893 a new office was established, that of Examining Physician to Outpatients. Dr. John H. McCollum was the first incumbent and during the next year excluded 500 cases of contagious disease out of over 25,000 patients whom he examined.

In 1896, twenty-five years ago, 29,867 new patients visited the Outpatient Department, with a total for the year of 91,468 visits by old and new cases. The staff consisted of six physicians, six surgeons, two nerve, two skin, two throat, two eye and one ear specialists. In 1897 x-ray work began in the hospital.

On June 3, 1898, it was voted in accordance with the recommendation of the visiting physicians and surgeons of the General Hospital, "that the seniors in the Outpatient Department for diseases of the skin, of the nervous system, of the throat, and of the eye be regarded as members of the Visiting Staff, so far as recognition confers the right to attend and vote at the meetings of the Staff which are called to consider general questions of Hospital policy." "Under the terms of this vote, Drs. James C. White, James J. Putnam, Algernon Coolidge, Jr., and Oliver F. Wadsworth became members of the Visiting Staff."

In 1899, only sixteen years after the opening of the model Outpatient building, it was proposed to build a new one, and "on March 23, 1900, a communication was submitted from Mr. Thomas E. Proctor, offering to pay one-half the cost, not exceeding $75,000, of a new building for the Outpatient service of the General Hospital, the Trustees to appropriate the balance. Thereupon, the Committee on Buildings and Repairs were instructed to procure plans and estimates for such a building; and the Outpatient staff were requested to appoint from their number one physician and one surgeon to act with Drs. R. H. Fitz, J. C. White and J. J. Putnam, as a Committee of Consultation in the preparation of said plans." The cost of the building proved to be $226,225. In 1901 the foundation of the new building was under way, and on October 16, 1903, it was opened for inspection. The occasion was her-

alded as a notable one, the building being regarded by medical and surgical experts as the best of its kind in the world. At the present time it still continues as one of the very best, but we are already feeling the need of new space. The inauguration and growth of special clinics and the expansion of the old general clinics may necessitate an addition to the building some day.

5. *1903-1921.*—The opening of the new building in 1903 allowed the rapid development of new departments. This same year the orthopedic department was opened under Dr. Joel E. Goldthwait, and the children were separated from the men, to constitute the Children's Medical Outpatient Department. The central record room, with the new record cards, and the new lecture rooms were much appreciated. The new hydrotherapeutic and mechanotherapeutic departments were also begun with the opening of the present Outpatient building.

In 1905 occurred the beginning of the world-famed social service work in the Outpatient Department under Dr. Richard C. Cabot. The first annual report for the year from October 1, 1905, to October 1, 1906, is entitled "First Annual Report of Social Work *Permitted* (italics mine) at the Massachusetts General Hospital." The opening words of this report are worth quoting: "In the Outpatient Department of the Massachusetts General Hospital (and I suppose in most other hospitals) there occurs many times each year a scene not unlike that described in 'Alice in Wonderland':

"'Have some wine,' said the Hatter.*
"'I don't see any wine,' said Alice.
"'There isn't any,' said the Hatter."*

"Without any sense of the humor and pathos of the situation we say (in substance) to many patients: 'Take a vacation,' or 'Get a job,' 'Get a set of teeth,' or 'Get a truss.' There is none in sight and no means of getting any. What do we do then? We pass cheerfully to the next patient.

"This is one of the gaps which the social workers have tried to fill at the Massachusetts General Hospital. Believing that when a hospital undertakes the care of a patient it ought to *do it* and not be content with going through the forms of doing it, we have tried to fill the gap between good intentions and their fulfillment."

Out of the small beginnings of the social service work in the Outpatient Department has grown up the present extensive Social Service Department caring for inpatients as well as outpatients and with ramifications into every clinic in the hospital. It has proved to be one of the most vital structures of the entire institution. Miss Ida Cannon, the present chief of the Social Service Department, began in 1905-06 as an "assistant outside the Outpatient Department." Now she is very much in the *inside* of the hospital. In 1906 the Trustees referred to Social Service as an unofficial department of the institution; of 20,010 new cases, 518 were referred to it—not, however, it was stated, "as a criticism of the hospital."

In 1911, ten years ago, there were six physicians to medical outpatients and four assistant physicians, four surgeons and four assistant surgeons, five physicians in the skin clinic, eight in the nerve clinic, eight in the throat clinic, five in the orthopedic clinic and three in the genito-urinary clinic. The "G-U" clinic had been instituted as a separate department the year before—in 1910.

In 1913 a department of syphilis was organized and new rooms constructed on the top floor of the Outpatient building for this clinic, which was called the "South Medical Department." Dr. C. Morton Smith was appointed to take charge of it. This same year (1913) a new clinic was established for the study of industrial disease, but the war delayed the preparation of special quarters for it until the present time. Rooms are now being built on the second floor of the Outpatient building to house this clinic under the charge of Dr. Wade Wright.

Still another innovation occurred in 1915 when a consultation clinic for persons of moderate means was established in the Outpatient building. It has met twice a week in the afternoon. Since this large building had remained idle most of every afternoon the consultation clinic has served to increase its usefulness. During the war it was discontinued, but it has since been resumed.

In the Trustees' Report for 1915 a tribute was paid to women volunteers who had for some time been serving as clinic secretaries or social workers in the Outpatient Department. Their work in every clinic had grown "increasingly useful."

A comment in the report for 1915 is worth quoting: "No physician (in the Medical Department) should see more than six new cases or twenty 'old' ones (requiring little or no physical examination) within three hours." It goes on to say, "We have left student-assistants out of account in this calculation because the help they give is just about balanced by the time that must be spent in teaching them if they are to be given any fair return for their labor." I quite agree that no physician in the Medical Department should see more than six new cases or twenty "old" ones in three hours, and if only two hours are spent in the clinic he should not see more than four new cases or twelve "old" ones. Under present arrangements in the medical department not only must

*Although the Hatter was present at the famous Mad Tea Party it was the March Hare who asked Alice to have some wine.

the physician often see an average of four to six or even more new patients but he must also see such "old" patients as belonged to him on previous visits as new cases. Thus it is possible that on busy days he may have to see eight or ten new cases and five or six "old" ones. This is too many. Such a situation should be discountenanced in the medical department. In the special clinics where a complete examination may not be essential this may not apply. A kind of clearing house test to lighten the load has been tried out in the Medical Department. It has, however, proved ineffective. Of seventy new cases which I saw personally in five days only four could be cleared directly from the Female Medical to other departments where they belonged. This speaks well for the clearing house system at the Admitting Desk in the basement, but it also shows that if we want to maintain quality of work we must decrease quantity, as occasion demands. In private practice we would not think of seeing more patients than we could properly care for. Even more careful should the hospital be in its effort to maintain a high standard. In addition to a reasonable restriction of new cases admitted daily to the Outpatient Department, it would seem wise eventually to give patients appointments by hours as well as days for later visits.

The second point concerning the students is also of interest. The view expressed is a little narrow. We mustn't lose patience just because at times a student may seem in the way. It is a fact universally recognized that a teaching hospital progresses—the presence of the students is a stimulant and of vital importance to the hospital, including its Outpatient Department. To measure the value of the student merely by the amount of immediate help he can give the clinic is very short-sighted. He is another essential for the maintenance of our high standards.

During the past ten years special clinics have grown up within special clinics and one finds more and more mention of them in the reports of recent years. One of the very first of these was established as long ago as 1905 in the Medical Department and proved of great value in pointing the way. It was the tuberculosis class which helped in the pioneer work of the nation-wide campaign against tuberculosis. In 1915 mention is made of the establishment of the clinic for the treatment of non-pulmonary tuberculosis in 1913. Also in 1915 there were special assignments under the Medical Outpatient Department in diabetes, thyroid disease and heart disease. In addition most of the gastric cases were seen by two physicians. Cases of lead poisoning, of sterility, and for phthisis diagnosis were handled also in special clinics. In 1916 a nutrition clinic for children was established, and mention is made of good attendance at the clinic for the study of hay-fever and anaphylaxis. A posture clinic has been added to the list, and since the war also an arthritis clinic and a clinic for convalescents. Plans are now under way to establish a diet clinic (to help take care of obesity, nephritis and heart disease as well as to be correlated with the diabetic clinic) and also a clinic for blood diseases. Comment should be made on an extract from the Trustees' Report for 1919, which reads as follows:

"First tuberculosis, then syphilis, gonorrhoea, diabetes, stomach troubles, poliomyelitis, children's nutrition, speech defects, asthma, and heart disease have been separated from the general clinics in our Outpatient Department and are now treated in special clinics. In each of these a physician treats for the time being one disease only. This policy originated in this hospital and has been widely copied elsewhere. There is no possible doubt of its value to the patient. . . .

"The same principle of assembling like groups of patients is being carried out *within* such clinics as the children's, the nerve, the orthopedic and the genito-urinary. The babies with eczema, the children with heart disease, the dyspeptics, the epileptics, the scoliotics, the cases of gonorrhoeal vaginitis in children, are separated, and each group treated by a single physician, although special rooms are not assigned to each.

"The dangers of this method are to the physicians; it tends to make keen, narrow specialists, skillful and interested in one disease only, while in the general clinics from which all these groups are withdrawn the interest is diminished and the men tend to lose zest. This danger can be avoided only by a system of rotation or exchange in the special clinics. . . . The physician who passed in succession through the diabetic clinic, the asthma clinic, the tuberculosis clinic, and the gastro-intestinal and cardiac clinics would get a training probably unequalled anywhere in this vicinity."

Much of all this is true, I believe. The patients are certainly benefited, and experts along certain lines are developed. I believe, also, that the medical staff, particularly those men who are engaged in general practice or in the practice of internal medicine, would be much helped by a rotation of service as assistants in the special clinics, as well as in the general medical clinic. This is actually now in effect and has been during the past year under the new arrangement in the Medical Department. I believe it is working out satisfactorily. But the wisdom of having the chiefs of the special clinics also rotate is very doubtful. In fact, the present high level and proposed higher level of these special clinics would drop seriously if the experts should abandon the fields in which they are expert. In these days of rapid ad-

vance in medicine, a man cannot be expert in several different branches. This has been proved over and over again. Dispersion of energy means loss of standing in the front line of medical progress. A man may naturally be broad or narrow minded; he will continue to be, whether he is a general practitioner or an expert specialist.

Finally, with regard to the special clinics, I know that there is a danger of their being overcrowded. The enthusiasm of the clinic chief builds up the clinic, but before he is aware, he is hampered by numbers. I believe that the special clinics should serve three purposes: first, to improve diagnosis and treatment for the patient's sake; second, to educate the staff and students; and third, to make actual contributions to the sum of human knowledge by research. None of these functions can be properly fulfilled if the clinic is too large. When it grows unwieldy, cases should be sent back to the general clinics to be followed there with the advice already given by the special clinic. This will not only help out the special clinics, but it will also counteract in a very beneficial way the criticism directed against the special clinics for robbing the general clinics of interesting and instructive cases.

And now, in conclusion, what of the present activity of the Outpatient Department? In attendance, it reached its zenith in 1917, when there were 205,524 total visits, with 31,104 new cases, but I believe that in 1920, with but 165,676 total visits and 25,302 new cases, it did a better service to the community. With the Great War the attendance fell off and still remains below the pre-war figures. We should not try to have more patients until we have more room and a larger staff. There are now on active duty in the Outpatient Department an assistant superintendent with his staff of clerks in record room and at the admitting desks, and with his messengers, a corps of thirteen house officers (soon to be fifteen, when the medical seniors take their place there in the future), a head nurse with her staff of nurses, a chief of the Social Service Department with her staff, 34 visiting physicians in the general and special clinics of the Medical Department, 15 surgeons, in the Surgical Department, 9 physicians in the Dermatological Department, 13 in the Neurological, 12 in the Children's Medical, 18 in the Laryngological, 14 in the Orthopedic, 9 in the Genito-urinary, 6 in the Syphilis, and 7 in the Dental Clinic. Since the Eye and Ear Infirmary moved to its present location close to the hospital, eye and ear cases have not been treated in the Massachusetts General Outpatient Department, but have been sent there instead.

We owe to the community the most careful and conscientious work, not alone in the study and treatment of individual patients, but also in medical research. The study of early symptoms and signs of disease, the correlation of the work of the various departments and of the Outpatient Department and the House, and the follow-up of our cases (in which the Social Service Department can be of great value)—all these problems have been generally too much neglected in the past and yet are full of promise for investigation. Of course, the special clinics are the most fruitful in research, but the general medical clinics, too, may be studied with profit if they are not overcrowded. Always we must be careful that we do not lose sight of the forest for the trees. Concentration and well-tempered enthusiasm will often open up unlimited lines of very useful study. Although the publication of papers for the sake of publication is, of course, to be discountenanced, it is most surely the duty of anyone in this Outpatient Department to publish his work if he has something new or important to describe.

These staff meetings, begun two years ago, are another step forward in the development of the Outpatient Department, and I feel that we can look ahead with confidence to a steady increase in the efficiency and value of this vital part of the hospital to the community.

ACUTE INTUSSUSCEPTION.

BY W. F. HARPER, M.D., BOSTON.

History. The recognition of intussusception as a cause of intestinal obstruction dates back many centuries. Hippocrates suggested treating the obstruction by inflation of the bowel from below, while Praxagoras proposed opening the abdomen, a procedure which is universally practised today, though the first record of abdominal section for intussusception is not found until 1871, when a successful case of laparotomy for intussusception in a child was then recorded by Mr. Jonathan Hutchinson. One of the most important early papers is Leichenstern's monograph appearing in 1893. To Mr. A. E. Barker[1], however, belongs the honor of putting the treatment of intussusception on a rational basis. In an article which appeared in the *Lancet* in 1888, he argued very forcibly for the importance of operating early. However, at this time he could find records of only 73 cases, which showed a mortality of 78 per cent. This was not very encouraging to the profession, and as a result, operation was undertaken late, with a natural failure to decrease the death rate.

Even John Hutchinson, in 1892, although he had previously operated successfully on a child for intussusception, was afraid of laparotomy. When discussing methods of procedure, he says:[2] "If the patient be an infant, say un-

der two years of age, it will be well to be content with repeated attempts by injection. The results by laparotomy have been so almost invariably fatal, that it is safer to trust to other measures." Old superstitions and old methods of treatment die hard, and it was only gradually that laparotomy became recognized as the right treatment for intussusception. At first, only a very few successful cases of laparotomy were recorded, but this number gradually increased.

Intussusception in infancy is attended with an appalling mortality, some authors giving as high as 73 per cent., and the results are directly dependent upon the duration of the disease prior to operation. Clubbe[3], who has written a complete and accurate monograph on intussusception, had a mortality of 50 per cent. in his first fifty cases, a mortality of 25 per cent. in his second fifty cases, a mortality of 8 per cent. in his third fifty cases, and no mortality in his last twenty-five cases. This is, of course, a tribute to the operator's experience, and no doubt the mortality is much lower in the cases which fall into the hands of experienced operators, but the greatest credit belongs to the practitioner who sees that the cases go to early operation.

Definition. The condition called intussusception is caused, according to John Hunter, "by the passing of one part of the intestine into the other, and commonly by the upper passing into the lower."

An intussusception may start at any part of the bowel from duodenum to rectum, but about 88 per cent. of all intussusceptions begin in the region of the ileocecal valve. Cunningham[4], in his textbook on anatomy, in describing the ileocecal valve, says: "Where the ileum enters the large intestine, the end of the small gut is, as it were, thrust through the wall of the large bowel, carrying with it certain layers of that wall, which project into the cecum in the form of two folds, lying, respectively, above and below its orifice, and constituting two segments of the ileocecal valve. The condition may be compared to a partial inversion or telescoping of the small into the large intestine; it must be added that the peritoneum and the longitudinal muscular fibers of the bowel take no part in this unfolding; on the contrary, they are stretched tightly across the crease produced on the exterior by the inversion, and thus serve to preserve the fold and the formation of the valve."

The ileum nearly always projects four to seven centimeters into the lumen of the intestine. The cecum is very movable, which is due to the fact that it is nearly always covered completely by peritoneum, and lies quite free in the abdominal cavity. The mesentery of the small intestine is relatively much longer in children and this increase in length is naturally associated with an increased range of movement of the intestine. Peyer's patches, which play an important rôle in the intussusception, are most numerous and best marked in infants and in the ileum in its lowest part.

Pathology. The pathological changes in acute intussusception are caused by compression of the vessels of the mesentery. The entering mesentery becomes stretched and twisted, and the veins and lymphatics are blocked. The distended veins give way and blood is poured out into the submucosa and on the mucous surface. The intussusception becomes swollen and hard, and it is this swelling which makes the reduction hard, and at times impossible. In some cases, the arterial supply may be cut off and gangrene result. A small amount of straw-colored fluid is poured out into the peritoneal cavity, and this is usually noted as soon as the abdomen is opened.

Etiology—Sex. There is a marked preponderance of males over females. Perrin and Lindsay[5] found that 64 per cent. of their cases were in males; Fitzwilliams[6] found 68 per cent. males in 788 cases; Adams'[7] series gave 66 per cent. males; and in a review of 112 cases admitted to the Children's Hospital since 1911, we find 71 males, or 63 per cent. The striking feature in these statistics is the uniformity in ratio of males to females.

Age. Intussusception is really a disease of infancy, as is readily seen from Figures 1 and 2. Of the 112 patients treated at the Children's Hospital, 99 were under the age of two years,—a percentage of 88.3 per cent. The age of the youngest child was six weeks; of the oldest, five and a half years.

If you will observe the chart of age incidence in months during the first year, you will see that the vast majority of cases occurred between the fifth and ninth months, and that the number rapidly diminished after the ninth month. Sixty-six per cent. of the cases occurred between the fifth and ninth month. Perrin and Lindsay[5] report similar results and believe that this has an important bearing on the causation of intussusception—since it is the period when teething, with its associated gastrointestinal disturbances, commences, and also the time when breast milk begins to be supplemented with artificial feeding.

The Mechanism of Production. Eighty-eight per cent. of the acute intussusceptions treated at the Children's Hospital occurred during the first two years, and between ninety and ninety-five per cent. of all intussusceptions were either ileocolic or ileocecal. It is therefore clear that any theory of the causation of intussusception must explain two things: (1) why all types are more common in the first two years of life; and (2) why the ileocecal and ileocolic are

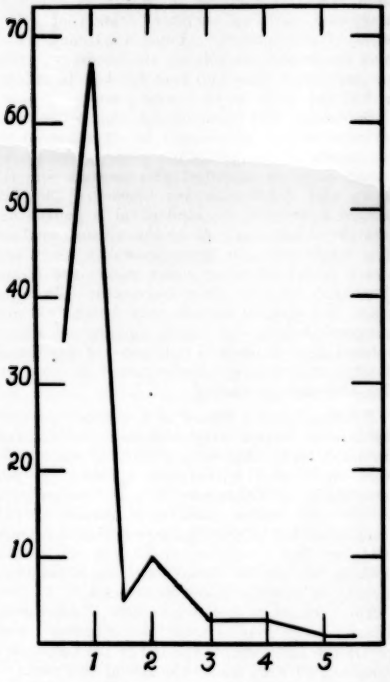

DIAGRAM No. 1.—Distribution of cases according to years. Figures on abscissa designate years. Figures on ordinate indicate the number of cases.

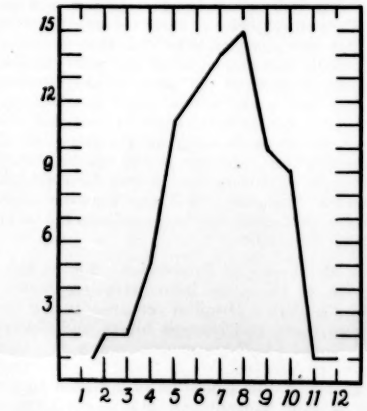

DIAGRAM No. 2.—Distribution of cases according to first 12 months. Figures on abscissa designate months. Figures on ordinate indicate number of cases.

much more comon than either the enteric or colic.

Let us examine the many theories that have been advanced to account for the origin of intussusception, in light of the ability to satisfy the above conditions.

1. Mr. D'Arcy Power[3], in his Hunterian lecture on intussusception, delivered in 1897, inclined to the opinion that a disproportion between the width of ileum and cecum, associated with increased and irregular peristaltic movements of the large intestine, was one of the main causes of intussusception. This, however, does not seem to satisfy the condition entirely, for at birth the diameter of the large intestine is practically the same as that of the ileum, and the disproportion increases with age. Again the hypothesis fails to explain why the majority of intussusceptions are ileocecal or ileocolic, for abnormal peristaltic movements are not confined chiefly to the ileocecal region.

2. Some men contend that intussusceptions result from paralytic conditions of the intestine allowing prolapse of one portion into the other. The same objection applies to this theory as to perverted peristalsis. Why should paralytic conditions of the intestine occur most commonly in the region of the ileocecal valve? It is conceivable that the ileocecal valve, projecting, as it does, into the cecum, would more readily prolapse on very slight provocation than any other section of the intestine, but the same does not apply to the ileocolic variety. There is no doubt that this theory explains some of the intussusceptions, but we must look elsewhere for explanation of many others.

3. A third group believe that the exciting cause is the presence of some congenital abnormality, such as a constriction or of some growth, such as carcinoma. This theory does not account for the prevalence during early life, for new growths of the intestine are not common in childhood.

4. Perrin and Lindsay[5] believe that the swelling of Peyer's patches are responsible for most of the intussusceptions. They give figures showing that during the first year of life the quantity of lymphoid tissue in the lower end of the ileum and the degree of projection of the valve into the cecum are at their maximum. They feel that the great majority of intussusceptions are caused by inflammation of Peyer's patches, and this theory will certainly satisfy both the conditions borne out by our curves. They contend that the lymphoid tissue is best developed in fat babies, which agrees with the observation that a great many intussusceptions occur in fat, well-developed and healthy babies. While the theory of Perrin and Lindsay[5] is an important contribution to the understanding of the condition it does not account for all intussusceptions, especially the enteric and colic, and

after reading the literature one comes to the conclusion that the direct cause of intussusception is still obscure in many cases.

Symptoms. Many authors have commented on the extraordinary uniformity in the symptoms of acute intussusception, and a review of the cases treated in the Children's Hospital of Boston, Mass., fully confirm this. Clubbe[8] says that the very sudden onset in a previously healthy baby is a distinct peculiarity of intussusceptions. The child is seized quite suddenly with pain; screams, turns pale, vomits, and in a short time seems to recover itself only to cry again at intervals, as if in pain. Soon after the first scream the baby may pass a normal stool, but in about 98 per cent. of all cases blood will be passed by rectum in from two to twelve hours, and enemata fail to produce any fecal material. The vomiting observed in the beginning of the attack is reflex in character and usually soon subsides, though in some of the severe cases it may persist throughout. As the obstruction continues, the vomiting returns, and being, in this case, due to the intestinal obstruction, persists until the obstruction is relieved. The mass, which usually varies much in size and position, can nearly always be made out by abdominal palpation. At first the abdomen should be palpated with the fingers, but if nothing can be made out in this way, it should be examined bimanually, the fingers being placed in one loin just as in examining for a kidney. In a very rare number of cases the mass is palpable by rectum when it cannot be felt abdominally, and one should not fail to do a rectal examination when the mass is not palpable abdominally. If there is any distention or the child resists or screams, it is almost impossible to palpate the mass and under such circumstances one should not hesitate to anaesthetize the child for diagnosis. Clubbe[8] recommends that anaesthesia should always be used for diagnostic purposes whenever no tumor is palpable, even though the abdomen is soft and flexible and flaccid, and the abdominal examination seems easy. The mass is not tender and is usually described as "sausage shape," though it is often more rounded than oblong, and about the size of an English walnut.

In the cases reported in this paper from the Children's Hospital, the following symptoms were present in the following order:

1. Recurring attacks of pain associated with pallor, cold sweat and reflex nausea.
2. Mucus, blood-stained mucus, and blood in movements.
3. Obstructive vomiting.
4. Toxemia due to obstruction.

It is of the utmost importance that these cases be diagnosed early, for the mortality depends directly upon the time elapsing between onset of disease and operation. If twelve to twenty-four hours are lost before the child's symptoms increase to such an extent that the diagnosis is easy, it is too late. An extraordinarily large number of cases with a definite and clear-cut history, are missed, and so only come to the hospital when the chances of recovery are small. The physician may suspect intussusception from the history, but on examination of the child fail to palpate a mass, and being misled by the appearance of well-being of the child, sends it home with a bottle of oil or some other medicine. If one remembers that the history which is most typical is of the utmost importance and that the symptoms of shock rarely appear until twenty-four hours after the onset, mistakes in diagnosis will be less common and the mortality will be greatly reduced.

The differential diagnosis of acute intussusception does not offer many difficulties, but certain conditions may simulate it.

Henoch's purpura may and does give rise to symptoms akin to those of intussusception. Indeed, Lett[9] records a case of Henoch's purpura complicated by the presence of two separate intussusceptions occurring at an interval of seven days. The main symptoms of Henoch's purpura are the presence of purpuric spots, swelling of joints, abdominal pain, passing of blood by rectum, and vomiting.

The presence of purpuric spots not associated with a palpable tumor should make the diagnosis relatively easy. However, very rarely the abdominal symptoms may precede those of purpura, and in such a case the differential diagnosis may be almost impossible.

Intussusception is often diagnosed appendicitis. The presence of blood in the stools and a palpable abdominal tumor should prevent such a mistake. However, since most men believe in operating for appendicitis as soon as possible this mistake does not lead to very serious consequences.

If a child is seen for the first time who is sick with a simple infectious diarrhea and is having a great deal of tenesmus, and passing nothing but blood and mucus by rectum, the possibility of acute intussusception should be considered. However, the onset and course of the disease and the absence of a tumor should make the diagnosis relatively easy. Clubbe[8] reports six cases of intussusception occurring in infectious diarrhea, and intussusception should be thought of as a complication when a child suffering from infectious diarrhea suddenly grows worse, suffers more pain, vomits, and passes more blood by rectum. If, under these circumstances, a palpable tumor is found the abdomen must be opened at once. Under all circumstances, as soon as the diagnosis is made, preparation should be made at once for laparotomy and reduction of the intussusception.

Before proceeding to the details of operation, let us consider for a few moments the question of anaesthesia. Experience has shown us that ether is the best anaesthetic. The surgeon must attempt to secure a trained anaesthetist, preferably one experienced with children, for there is no question that reducing a shock to its minimum will keep the mortality low. The greatest danger seems to be in too light anaesthesia. Frequently the patient seems to be relaxed until the peritoneum is opened, when he suddenly strains and vomits, and the intestines are pushed out of the abdominal cavity. This means a delay in the operation, and unnecessary handling of the intestines, both of which increase the shock. The surgeon must impress upon the anaesthetist the importance of keeping the patient well relaxed. The child should be placed either on a shock table or upon a hot water bag, care being taken that the bag is not too hot and is properly covered. The site of the incision depends upon the position of the mass in the abdomen, but since the great majority of intussusceptions occur in the region of the ileocecal valve, a midline incision is most commonly employed. The umbilicus is made the center of the incision, which runs, not through it, but curving around it. Most operators favor a large opening—one and a half inches to two inches above and below the umbilicus. Before opening the peritoneum all forceps should be removed and the bleeding checked by fine catgut ligatures. As soon as the peritoneum is opened, the tumor should be felt for with two fingers. The apex of the intussusception having been discovered, it is steadily passed backward by pressure exerted by the finger and thumb on the containing bowel from below. The early part of the process is easy, but gradually becomes less so as the neck of the intussusception is reached. When the difficulty becomes pronounced, the intussusception should be brought into view, the incision, if necessary, being elongated for this purpose, and the final manipulation should be concluded by envelopment of the compressing fingers in a layer of gauze and the addition of gentle traction. It is at this stage that rents are most likely to occur, being the result of distention and traction. Every effort should be made to avoid tearing the intestine, for it favors infection and adhesions.

When the reduction is complete the swollen and edematous mucous membrane, particularly the segments of the ileocecal valve, may suggest the presence of a polyp, and unless the operator bears this in mind he may needlessly cut into the cecum. The exploration and reduction should be carried out as far as possible without unnecessary exposure of the intestine—a very important prognostic point—but in difficult cases it is far better to allow the bowels to escape into wet towels rather than waste time in manipulation. As soon as the intussusception is reduced any splitting of the serous coat may be drawn together by fine catgut sutures. The damaged bowel should then be douched with warm saline and returned to the abdominal cavity.

The child should be wrapped up in blankets and rushed back to bed as soon as possible. If the child seems to be shocked it should be given salt solution by rectum while still on the operating table. For the first four or five hours following the operation, the child should be given nothing but sips of cold, boiled water. At the end of this time, if it is a breast-fed baby, put it on the breast for two minutes, and at the end of two hours, again for two minutes. If the child seems to nurse all right, then it may be given the breast every two or three hours and allowed to suck its usual time. If the child is not breast-fed, then it should be given the food in use when taken ill, but always in very small quantities at first.

Distention is a bad sign and measures must be used to prevent or relieve it. Enemata are usually best, but if they do not improve the condition, one must resort to pituitrin or calomel.

Clubbe feels that morphia is a bad drug and gives it only to those cases which are exceedingly restless and then only in small doses.

As a rule, the convalescence is rapid and uneventful. There is, however, one feature of the convalescence to which attention should be called, and this is the very high reactionary temperature which is frequently observed. The temperature, which is usually subnormal on admission, commonly rises to 101 and 102, and in some cases to 104 or even 106 after the operation. This seems to be due to the absorption of toxins eliminated from damaged intestinal wall and nearly always subsides without treatment in a day or so.

In considering the surgical treatment of intussusception nothing has been said in regard to resection of intestine, because many men believe that the mortality in such cases is so very high that it is better to take a chance on the intestine becoming viable. However, there are times when resection or anastomosis is necessary, the reduction being impossible, but every case treated in the Children's Hospital, in which resection, anastomosis or enterostomy was performed, died. Some men[10] still deny that there are any successful cases on record, but Clubbe[3] has collected from the literature 16 cases of successful resection, the most remarkable case being reported by Dowd[11] of New York, in which intussusception being irreducible, he successfully removed one-third of the colon in a five-day infant.

No mention of treatment of intussusception

by irrigation has been made because experience has shown that while such a method may cure a few cases, it is a dangerous procedure and should be abandoned entirely in favor of laparotomy.

Mortality. In the 112 cases treated at the Children's Hospital there were 44 deaths, giving a percentage death rate of 39.2. Perrin and Lindsay[5] had a mortality of 34.7 in 400 cases, while Clubbe[3] reports a mortality of 20 per cent. If you will glance at the following diagram you will see that the fact on which the mortality depends is less the skill of the operator than the length of history prior to operation.

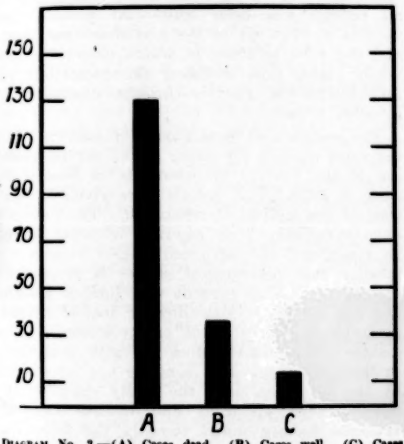

DIAGRAM No. 3.—(A) Cases dead. (B) Cases well. (C) Cases treated during first six months of 1921 with no mortality. Figures on ordinate indicate the number of hours elapsing between the onset of symptoms and operation.

It is both interesting and encouraging to find no mortality in the eight cases of intussusception treated at the Children's Hospital for the first six months of this year. The average duration of the disease prior to operation in these cases was fourteen hours. Consideration of the mortality of acute intussusception therefore shows that it lies in the hands of the practitioner to reduce the mortality.

The writer is indebted to Dr. J. S. Stone, Chief Surgeon to Children's Hospital, for the statistics on which this paper is based, and it is a pleasure to acknowledge his advice and assistance in the preparation of this paper. The writer also wishes to thank Dr. C. K. Drinker of the Harvard Medical School for his many valuable suggestions.

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RECENT EXPERIENCE WITH RADIUM IN MALIGNANT DISEASE OF THE OESOPHAGUS AND UPPER RESPIRATORY TRACT.*

BY HENRY HALL FORBES, M.D., NEW YORK CITY.

MR. PRESIDENT and Members of the New England Oto-laryngological Society and Guests: Your secretary on our return trip from Europe last summer asked me to come to Boston and take part in one of your meetings. I little realized I would be a headliner, but I do assure you that I was pleased with the idea, and that I am doubly pleased that I am here tonight, although I should like very much to reverse the old quotation and say that it is better to receive than to give, for I certainly have every hope of taking back with me to New York much that is new and encouraging.

In coming here I feel some diffidence from the fact that I have so little to offer in a constructive sense. But before giving you my own conclusions, which are brief, it is quite fit and proper that an outline of the work which has been going on for the past two and a half years should be presented to you. This work covers the period of time which has been given over to the study of the results of the use of radium, especially in cancer of the larynx and oesophagus. My use of radium previously has been limited to the treatment of a comparatively few cases of papillomata of the larynx. The advent of the Department of Radium in the Postgraduate Hospital in charge of Dr. G. S. Willis seemed to me a golden opportunity for a co-operative plan of action—a combination where the experience of the radiologist and the bronchoscopist would be of mutual benefit; the one to control the type of radium, the method of application and the duration of the exposure; the other, by direct inspection, to diagnose the lesion, to make the applications and to note the progress of the case. Advantage has been taken of the x-ray department for the preliminary and corroborative diagnosis and later as a check in cases where a radium tube was used. This was in the early work through the oesophagoscope where I was not quite sure that the radium tube might not change its position following the removal of the oesophageal tube. Our one thought at the

*Read at the meeting of New England Otological and Laryngological Society at Boston, Mass., Nov. 22, 1921.

time was the possibility of giving to the patient and to radium a scientific standing. It has been most interesting and instructive, and I feel fully repaid if this has been in any way a stimulus, to those seeing the work, to continue the work or to suggest new modifications. I think it may be stated as a fact that the use of the x-ray for the direct treatment of laryngeal and oesophageal new growths is at present impracticable. (Dr. W. H. Meyer in charge of the x-ray department of our hospital.) Then it is to radium that we must turn for aid in the treatment of laryngeal cancer as an adjunct to surgery in operable cases; and to radium alone for relief and possible cure of the inoperable cancer of the larynx and all cancers of the oesophagus. The transthoracic operation for cancer of the oesophagus must be mentioned, but we all know the gravity of the operation and how rare it is for us to see a really suitable operative case—that is, one recognized in its early stages. At first all applications of the radium needles were made by the method of suspension laryngoscopy; some cases are still observed and treated by this method (recent case), but the greater number are examined and treated by direct laryngoscopy, using a Jackson tube; advantage being taken of the very comfortable position advocated by Dr. Johnson of Baltimore. The applications to the upper part of the oesophagus or hypo-larynx may be made through the oesophageal speculum, or lower in the tube by the oesophagoscope. Precision in location of the disease and the opportunity of watching the progress of the disease cannot be too strongly emphasized. "Dr. Willis feels that the application of radium, as to dosage and the question of the utilization of the Beta or Gamma rays, is still very much in the experimental stage." There also seems to be doubt as to the method of application which is best, emanations or the radium itself. (Practical advantage of emanations.) We have used the needle, availing ourselves of both the Beta and Gamma rays, and we have used the protected or screened tubes giving us the Gamma rays alone. Another operator combines the work of the internal application with an external application, getting the so-called cross-fire; the value of this latter method I must leave to the expert in radium to determine.

I will not attempt to individualize in giving you the results in the cases that have come under my care. I am sorry at the outset to state that, for some reason unknown to me, the greater number of cases have come under the class of the inoperable and a few advanced and hopeless. With the experience gained, many of our earlier cases, we feel, were decidedly not suitable for radium treatment. Not that a death has occurred from toxemia, as reported by other observers, but that cases have simply not responded and probably death has been hastened. The laryngeal cases to date number some 24. In only one (and this a combined hemi-laryngectomy) do I feel that we have relieved the patient; I do not use the word "cured" because sufficient time has not elapsed for a possible recurrence (only two years). I do feel that I have learned that an early tracheotomy is a benefit to the patient in relieving the pain in inoperable cases and adding to his comfort. I feel that a number of abscesses that occurred following the use of the needle were not areas of infection, as first thought, but only a coincidence, as they occurred after all antiseptic precautions had been taken and have been observed by others where no radium has been uesd. At present the needles are limited to the non-ulcerative cases, and the tube to those in which ulceration has taken place, thus avoiding the possibility of introducing the needles through ulcerated or infected areas.

The oesophageal cases have increased in number since reading my paper at the annual meeting of the Peroral Endoscopists in Boston on June 1, 1920. Full details were given at that time of the method of treatment. The patients have invariably been received in what might be considered the advanced stage. It seems a fatality that oesophageal cancer is recognized so late. (Case at present who for six months had had difficulty in swallowing, loss of weight, cachectic and treated as cardio-spasm.) The disease unfortunately does not give symptoms in the early stages and hence is not recognized by the physician until the really grave symptoms become apparent and disease far advanced. I have noted recently the following given as the clinical signs of cancer of the oesophagus: Insidious onset; selective dysphagia to bread and meat; preservation of the appetite to an advanced stage; expectoration of small amount of blood-stained mucus; and malodorous breath. I might add localized pain and often expectoration of excessive amounts of mucus and loss of weight. How rare is it to have this complete picture. I do feel that an early gastrostomy is indicated in all cases of difficulty in swallowing and in the ulcerative stage where a physiological rest of the organ is demanded.

Under radium treatment we have added to the comfort and the morale of our patients; pain has been less or even temporarily relieved. the difficulty in swallowing has been less and many have gained weight.

Notwithstanding this apparent early beneficial effect both Dr. Willis and I agree that the results of the use of radium in cases of oesophageal cancer that have come to us have been nil and that no further cases should be treated until some other technique shall be suggested.

Under the head of personal experience I wish to mention that it was my privilege this summer to visit in London Dr. William Hill and note the method he employs, and also to have him demonstrate the use of his oesophagoscope. The general outline was the same as described. However, he uses the radium emanations properly protected in a tube. He had not buried any needles in the new growths of the oesophagus. It was pleasing to see that others were carrying out the direct methods of observation and application as already described. Dr. Hill was decidedly optimistic on the results that he was obtaining.

In conclusion, I wish to leave with you the impression that in all cases coming under my care as a laryngologist and bronchoscopist, and working in hearty co-operation with the radiologist who controlled the quality and quantity of the radium used, the results have been far from encouraging. In the pharyngeal cases of cancer we will continue the use of radium. We are hopeful in laryngeal cancer and are continuing our work. I feel that the earliest recognition of malignancy in the larynx and early operation will give the greatest benefit to the patient. Radium may be applied before the operation or later. I do feel that in radium we have a powerful therapeutic agent; that co-operation must exist between the radiologist and the specialist, both for diagnosis and for treatment. Failures of today may be successes of tomorrow, as our knowledge of the more scientific application of this element increases.

DISCUSSION OF DR. FORBES' PAPER.

Dr. D. Crosby Greene: The ultimate results in the two groups of cases which Dr. Forbes has reported in his interesting paper are not widely different from what we have observed in the Throat Clinic at the Huntington Memorial Hospital in Boston. We have, however, seen a marked degree of palliation in some of the oesophageal cases, and a few apparent cures among the laryngeal cases.

In our clinic we use exclusively the emanations, which have the advantage over the radium element, chiefly in the greater flexibility of application. The emanations have the further advantage of being available for the seed method of treatment, which was devised by Dr. Duane, the physicist of the Huntington Hospital.

Briefly, this consists in the insertion of minute glass capsules, containing small amounts of the emanations, into the tissue of the tumor. A sufficient number of these seeds are inserted at proper intervals to subject the entire growth to radiation. The area of active radiation of seeds, containing one to three millicuries, has been shown to be about one centimeter. By inserting these seeds at intervals of about one centimeter throughout a tumor, the entire mass may be effectively radiated.

The seed method is of especial value in radiating lesions in the throat, since it permits accurate application and retention of the dose where it is desired. The instrument used for insertion is a simple trocar, varied appropriately in length and shape, according to the location of the growth to be treated. For treating the lower end of the oesophagus we use a trocar eighteen inches to twenty inches long.

When a tumor is of such an extent, and so located that it can be entirely radiated by seeds, the results are almost always favorable. We are confronted, in our clinic, by two great difficulties; first, the great majority of cases come to us with the disease so advanced that it is impossible to determine the extent of invasion; second, the location of the growth is such that it is not possible to determine its extent or reach it on all sides. For example, in cancer of the oesophagus, we can, by oesophagoscopy, locate the upper limit, but are not able to judge accurately its lower limit, or the extent of infiltraton of the surrounding tissue.

The two important factors for success in treatment by radium are early recognition and accessibility. In some cases, as, for example, in cases of malignant disease of the accessory sinuses, a tumor may by surgery be rendered accessible for radiation. Dr. Mosher, Dr. Barnes, Dr. Harold Tobey and I have had favorable results in about 50 per cent. of the cases so treated.

In our experience, sarcoma as it appears in the throat is much more susceptible to improvement than carcinoma. Carcinoma of the papillary type yields better to radiation than the deeply infiltrating type. During the past two years we have been treating carcinoma of the oesophagus by radium seed insertions with the aid of oesophagoscopy. There has not been a single cure by this method, but in the majority of cases there has been definite palliation for three or four months. There have been no unfavorable effects from this treatment, excepting in cases of cancer of the upper end. In this region the reaction following the treatment has increased the dysphagia so much that I have given up using radium in this region. Some of these cases appear to be relieved, to a certain extent, by x-ray treatment, contrary to Dr. Forbes' experience.

In cancer of the larynx, we feel that in early cases surgery offers the most hope; in the later cases. surgery, supplemented by radium. We have now three cases of apparent cure out of a total of over 100 cases.

Dr. Harry A. Barnes: Mr. Chairman, and Members of the Society: In June, 1920, I reported before the Triological Society, meeting here in Boston, eight cases of malignant disease of the accessory sinuses, treated by operation followed by immediate radiation of the operative field. These cases were all operated upon during the two and one-half years previous to that time. Since then I have had nine other similar cases so treated.

Before I say anything about results, I should like briefly to describe the methods of treatment and their *raison d'être*. In the first place, I believe that all of these cases, unless they are distinctly inoperable by reason of involving inaccessible or vital parts, should be operated on first. Certain types of sarcoma, as Dr. Greene has stated, do respond wonderfully well to radiation. This is true especially of the sarcomas of lymphoid origin. Unfortunately this is not the type of sarcoma usually seen in the sinuses. And so it seems to me that with the sarcomas, as with the carcinomas, in this region at least, it is worse than futile, and a waste of very precious time, to try to get results by the use of radium alone.

The operation in these cases has been a modification of the one described by Moure; that is, two incisions in the cheek, both starting from a common point over the bridge of the nose; the first circling the lower rim of the orbit, and about a quarter inch below it; the other carried down the side of the nose near its junction with the cheek and ending just to the outer side of the ala. The flap between these incisions is turned outward, exposing the front bony wall of the antrum. This is then removed and easy access is had not only to the antrum, but also to the ethmoid, sphenoid, and

the naso-pharynx. I won't go into the technique of the evulsion of the tumor. That will suggest itself to all of you doing this type of operation, and of course has to be modified to suit the individual case. But I should like to insist on one thing, and that is that all gross tumor tissue be removed. Unless it is, the chances of a permanent cure, radiation or no radiation, are small. After the evulsion of the tumor, a triangular skin flap is cut from the cheek, leaving a large, permanent opening into the operative cavity, for the purposes of radiation and subsequent observation. The radiation is commenced immediately; that is, a tube of suitable strength, about 35 or 40 mc, screened with steel, is placed in the middle of the antral pack while the patient is still under ether, and allowed to remain there throughout convalescence. This tube should be over a centimeter from the nearest part of the operative field. Its object is not to produce a destructive effect in the gross sense, but merely to devitalize any minute fragments of tumor tissue that might be left even after the most painstaking operation. Any tumor cells set free in the neighboring lymphatics by the crushing nature of the operation might also be destroyed. These are the theoretical reasons that first led me to try out immediate radiation on these cases. We all know that radiation produces a very marked effect on gross tumor tissue. But I had never seen this destructive action quite keep pace with the growth of these tumors, whether before operation or in cases of post-operative recurrences. The results in this series of cases tend to confirm the theory.

Of the eight cases reported a year and a half ago, the statistics at that time were as follows: Two cases of sarcoma were well, and without recurrence, fourteen and twenty-six months, respectively, after operation. Of six cases of carcinoma, two were well and without evidence of recurrence or metastases seventeen and twenty-five months, respectively, after operation. The four other cases either were dead or in the last stages of exhaustion. These figures are unchanged today, except that we may add eighteen months to the period of freedom from disease in all of the four successful cases. All of these are essentially over the three-year period which we used to think signified a permanent cure. Of course, we now know that recurrence, and especially metastases, may occur after much longer periods of quiescence. So that we cannot say that any of these patients is permanently cured. I think, however, that we may regard them as successful cases.

It is too early as yet to say much about my more recent cases. Of these, five were carcinomas and four were sarcomas. Of the carcinomas, two are well after periods of six and ten months, respectively. One has an extensive recurrence. Two are dead. Of the four sarcomas, two are well after five and nine months, respectively. Two have had recurrence. Both are now being treated, I believe, by Dr. Greene at the Huntington Hospital. They are both sarcomas of the antrum.

In regard to the closure of the opening in the cheek, I believe it may be closed safely any time after the second year. The chances of a local recurrence are then very remote.

DR. HARRIS P. MOSHER: Mr. Chairman, and Members of the Society: I was asked by the Secretary to sum up the papers of the evening.

My summary is that the first speaker was gloomy about the good accomplished by radium in malignant disease of the upper jaw, larynx and oesophagus, the second was a little hopeful, and the third decidedly hopeful. To my mind the main point brought out this evening is that in malignant disease of the upper jaw, and of the accessory sinuses, radical operation followed by the use of radium apparently is giving a number of cures.

I should like now to discuss the papers individually.

In applying radium to malignant disease of the oesophagus Dr. Forbes works with cocain anaesthesia and with small tubes. I prefer general anaesthesia and a large oesophagoscope. Dr. Forbes said that he felt like giving up treating cancer of the oesophagus until he finds a better method. I feel that Dr. Greene has shown a better method. If Dr. Forbes will use general anaesthesia, a large tube, and seeds of radium emanation, I expect that he will go back to treating these cases.

Dr. Greene's explanation of the physics of radium was enlightening and welcome. He was hopeful about the treatment of leucoplakia, and hopeful also about the radium treatment of sarcoma. He brought out the point that sarcomata can be made to disappear, but that in 20 per cent. of the cases the growth returns. He was not hopeful about the radium treatment of carcinoma of the larynx. He said nothing about the danger of the radium causing necrosis of the laryngeal cartilages. Dr. Forbes seems not to have had this complication.

Dr. Greene feels that radium seeds are of distinct value in the oesophagus. After their use, the patients have less pain. They gain in weight, and die without the necessity of having the stomach opened.

Dr. Barnes has had some very successful cases of malignant disease of the upper jaw and the accessory sinuses. It is in this type of case that I have had the most experience. During the past two years I have had nine such cases. Four are living and five are dead. One, an osteo-sarcoma of the antrum, is alive after two years; one, carcinoma of the ethmoid and antrum, is well after nineteen months; one, angio-sarcoma of the inner wall of the antrum, is well after fifteen months; and the fourth, a case of carcinoma of the ethmoid, is well after nine months.

Dr. Barnes has said that the Moure operation which we are all using in these cases is an old one. I have looked up the dates and find that it was introduced in 1903. In 1912, another Frenchman began to use the incision employed for excision of the upper jaw; that is, he cut through the lip and retracted the whole cheek. Here in Boston we have not done this, but we have added the feature of leaving the wound open and keeping it open by stents in order to watch for recurrences, and in order to treat them directly if they occur. I have always thought that a case of chondroma of the septum which Dr. Richards and I worked over separately and together for five years, until his death, was the first case in this vicinity to be left open for observation and subsequent treatment by radium. Since that case, I have been preaching the advantages of the permanent window in the cheek.

When to close the window in the cheek in the apparently cured cases is a problem which is worrying me. The woman patient who had an osteo-sarcoma of the antrum and who has remained well for two years is beseeching me to close the window. Dr. Barnes feels that he would wait at least two years. The case of the angio-sarcoma of the inner wall of the antrum I have just closed after fifteen months. The window was a small one and was closed by a flap from the cheek. I was puzzled at first how to get an epithelial lining for the under surface of the flap. A cone of epithelium had grown from the skin edge deep into the window, and attached itself to the mucous membrane of the antrum. By freeing the mouth of the cone where it joined the skin, I was able to invert the top of it and to close it with a purse-string suture.

I have always used Moure's double incision, not a single incision, as Dr. Barnes has done in some of his recent cases. The double incision gives a

triangular flap from the skin of the cheek which can be tucked into the antrum. I am hoping that when I come to close my next case the skin can be dissected up after cutting it free at the edges of the window and made to furnish an inner lining for the skin flap employed to close the window. In my three remaining cases the window is so large that I am under the impression that a flap will have to be brought from the forehead or from the chest.

New growths of the upper jaw seem to vary in malignancy. The pathologist can help us very much by settling the degree of malignancy of the different types. It seems to be a fact that tumors of the upper jaw metastasize in the neck very slowly. I should do the open operation in all cases of sarcoma of the upper jaw. Dr. Greene feels that these cases respond so well to radium that he favors closing the window and treating recurrences through the nose. I have always been sorry that I closed one such case, which finally died of recurrence in the neck. I suspect that he had his recurrence first in the antrum, and that if the window had been left it would have been possible to apply radium more effectively.

I have come to believe that tumors of the septum are more malignant and metastasize more readily than malignant disease of the accessory sinuses.

Current Literature Department.

ABSTRACTORS.

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RECTAL CANCER.

MANDL (*Wien. klin. Woch.*, Jan. 12, 1922) makes a preliminary statistical report on a series of 779 cases of rectal cancer from Hochenegg's second surgical university clinic at Vienna during the past 14 years. Among these, 508 radical operations, of various types, were done, and twenty-five per cent. of these cases were alive and free from recurrence after five years. [R. M. G.]

INTESTINAL TUBERCULOSIS.

LOLL (*Wien. klin. Woch.*, Jan. 19, 1922) reports briefly on the diagnosis of intestinal tuberculosis by the demonstration of occult blood and Koch's bacilli in the stools. [R. M. G.]

THE ETIOLOGY OF RICKETS.

H. S. HUTCHISON AND S. J. SHAH (*Quarterly Journal of Medicine*, Jan., 1922) investigated the influence of diet and hygiene on the production of rickets at Nasik, India. The upper and lower classes in this city resemble one another in all respects excepting diet and habits. The former have a better diet, with more fat-soluble vitamin and more meat and vegetables. In spite of this, rickets is very prevalent among them.

In the case of the lower classes, the diet is very poor in fat, meat and fresh vegetables, with an excess of starch, and yet rickets is unusual.

If diet were the chief causative factor of rickets, the poorer class should have shown the greater incidence.

The difference is explained on studying the habits of the two classes. In the upper class, in which rickets is prevalent, the infants are kept confined in close, dark rooms, and are seldom taken out during the first year, while among the lower class the women work in the fields with the men and take their children with them.

It appears evident, therefore, that at Nasik the dietary factor in the etiology of rickets sinks into insignificance in comparison with the deprivation of fresh air, sunlight and exercise.

The authors also report interesting observations on late rickets. They report seventeen cases in which rickets occurred for the first time at or soon after the period of adolescence. Sixteen of these, or 94 per cent., occurred in well-to-do persons on a good diet but confined to the house without sunlight or exercise. All the cases were in women, usually at the age of 12 or 13 years. At that age the girls are married and are obliged by custom to remain indoors most of the time; their rooms are very dark and without ventilation.

We see, therefore, in late rickets the same causes operative as in early rickets, with the exception that females only are affected in the former case.

These observations confirm the experimental work of Paton, Findlay and Watson, who found that pups brought up in the country on skim milk did not get rickets, while other members of the same litters fed on whole milk and confined to the laboratory did develop the disease. [W. T.]

RADIOHUMERAL BURSITIS, EPICONDYLITIS, EPICONDYLALGIA (TENNIS ELBOW).

OSGOOD, R. B. (*Archives of Surgery*, March, 1922).—Osgood says:

1. Tennis elbow, epicondylitis, or epicondylalgia, presents a fairly typical syndrome, occurring in connection with certain sports, most commonly with tennis, and in various occupations and in lead poisoning. The right arm is more commonly affected than the left. This condition occurs more often in men than in women, but it is typical in both sexes. One case is reported in a boy of 14.

2. It seems to be most frequently caused by strenuous or repeated extension of the arm in a flexed position, meeting a sudden opposition to further extension, as in a backhand stroke in tennis, fencing or in boxing (Vulliet), or by striking blows with a hammer with the arm in a cramped position, by the punching and lasting of a shoemaker, by the slinging of mortar by the mason. It is possible that an infection or toxin may be the etiologic factor in certain cases.

3. The essential pathology is believed to be an inflammatory reaction in a commonly existing bursa, varying in size, and located beneath the conjoined tendon of the extensor muscles between this tendon and the tip of the epicondyle, the origin of the supinator radii brevis muscle, and the radiohumeral joint. Somewhat similar symptoms occasionally referred to the mesial condylar region may be explained by similar areolar tissue reactions beneath the common tendon of the flexor muscles. No constant bursa has been found in this region but adventitious ones may well occur.

4. Heretofore, the only method of treatment which has been generally successful has been complete immobilization for six weeks. Untreated, the discomfort may persist indefinitely: but it is usually self-limited, in from three months to a year.

The operation of splitting the conjoined tendon, opening the bursa, evacuating the contents, and curetting its walls is not likely to do harm; and in two cases it has been followed by a rapid subsidence of symptoms and free use of the arm.

5. It is possible that the so-called epicondylitis may be due to a lesion of more than one structure, as in the operative findings of Franke and Goeldel; but if in the typical lesion, the bursa described above is commonly found, and if its affection, as in our cases, should be found to be fairly constant, the name radiohumeral bursitis may be considered more descriptive than the term epicondylitis or tennis elbow.

[E. H. R.]

NEURO-FIBRO-MYXOMA TREATED BY CONSERVATIVE OPERATION.

GATCH, W. D., AND RITCHEY, J. O. (*Annals of Surgery*, Feb., 1922).—These authors write as follows:

Various authors believe that benign fibrous or fibro-myxomatous tumors of nerve sheaths may undergo a malignant degeneration into sarcoma. It would seem to the writers of this article that the safest criteria of judging at the operating table, whether a single tumor of a nerve is malignant or not, are the following:

1. The duration of the tumor. If the tumor is of long duration, it is of course not likely to be malignant. Case I shows that even a sudden and rapid increase in size of a tumor which has been quiescent for years is not proof positive of malignancy.

2. The presence or absence of motor or sensory paralysis. This is a most valuable point. A nerve will withstand really a remarkable amount of stretching or pulling from a benign growth, but is quickly destroyed by the infiltration of its substance by a sarcoma. In both of our cases pain and the various other sensory disturbances were the only symptoms produced by the tumors.

3. The gross appearance of the growth when exposed. Case II shows that it may be possible to remove a pure myxoma of the sheath by simply wiping it away. The encapsulation of the fibrous portion of the tumor and the possibility of shelling the same from the centre of a nerve trunk would seem to be strong evdence of a benign growth, as is the lack of encapsulation with fixation of the growth to the contiguous structures strong evidence for sarcoma.

4. Our experience with these cases leads us to regard the microscopic study of the tumor, especially if such study is relied upon to the exclusion of other evidence, as apt to be misleading.

If after consideration of all evidence available the surgeon is still in doubt as to the nature of the growth, it is perhaps wisest to be conservative, especially if the growth is in a situation where its complete removal is difficult.

[E. H. R.]

RUPTURED SPLEEN, WITH REPORT OF THREE CASES.

METCALFE, LT.-COL. R. F., AND FLETCHER, CAPT. L. Z. (*Annals of Surgery*, Feb., 1922).—These authors write as follows:

1. That the healthy spleen may rupture spontaneously or by comparatively slight trauma.

2. That the symptoms at first may be slight,—some dizziness, nausea or vomiting with restlessness and indefinite abdominal pains; or we may have immediate symptoms of severe intra-abdominal hemorrhage, depending on whether the capsule of the spleen has ruptured or remains intact, forming a large subcapsular haematoma.

3. That with our three cases, three of Willis', one of Fauntleroy's and one of Connor and Downes', an agonizing pain was experienced in the left shoulder, and we believe that if evidence of this radiating pain from the splenic region to the left shoulder can be elicited in any indefinite abdominal case with evidence of hemorrhage, that one may safely conclude that he has a ruptured or lacerated spleen to deal with.

4. That in view of the high mortality of unoperated cases, we believe that the only safe treatment is immediate splenectomy.

[E. H. R.]

CYSTIC DILATATION OF THE COMMON BILE DUCT.

REEL, P. J., AND BURRELL, N. E. (*Annals of Surgery*, Feb., 1922).—These authors write as follows:

By the way of summary it is of interest to note that during the past century, with its phenomenal development of abdominal surgery, there has been no apparent increase in the percentage of the occurrence of this condition. The preoperative diagnosis has never been recorded, due, no doubt, to its rare incidence. The striking clinical feature present in practically each case reported has been intermittent jaundice in the child or young adult, usually associated with some form of palpable tumor mass in the upper right quadrant of the abdomen. It would seem that cystic dilatation of the bile passages should be considered in the differential diagnosis when the above-mentioned clinical symptoms are encountered.

The case serving as a basis for this discussion is a female, aged fifty-six. Her symptoms, however, were noticed at the age of twenty. Since this time her main discomfort having been gastric disturbance, intermittent jaundice, pain, and tumor formation. So far as we have been able to determine, this is the oldest patient reported in the literature with this condition. The cyst, containing approximately 8 litres, is in all probability the largest on record. The patient at the present time (September 1, 1921) is enjoying good health and is able to attend to her household duties, the wound having healed.

[E. H. R.]

THE RESULTS OF HIGH LIGATION OF THE CYSTIC DUCT IN CHOLECYSTECTOMY.

HARTMAN, F. L., SMYTH, C. M., JR., AND WOOD, J. K. W. (*Annals of Surgery*, Feb., 1922).—These authors write as follows:

1. Where a cystic duct stump is left, it usually dilates to form a pseudo gall-bladder; hence we may get a recurrence of the symptoms after a cholecystectomy.

2. Where the cystic duct is ligated flush with the common duct, there is general dilation of all ducts, indicating that there is pressure in the biliary system.

3. The gall-bladder is not essential to life, but it seems to have a very definite function of storing bile and acting as a tension bulb to regulate pressure in the biliary system.

4. Nature endeavors to restore the normal condition in the biliary system after the removal of the gall-bladder by the ducts, including the cystic duct stump, undergoing a dilation and enlarging. It is an indication that nature rebels against man's attempt to improve on her, hence the gall-bladder must have some definite function.

[E. H. R.]

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RECENT DISCOVERIES CONCERNING THE ELIMINATION OF URINE.

FOR half a century, more or less, opinion as to the nature of kidney function has vacillated between two extremes, at one time holding with Ludwig that the elimination of urine was due to filtration, then shifting to the Heidenhain theory of secretion. Ludwig maintained that increase of blood pressure was followed by greater urinary output, and attributed the diuresis to increased *vis a tergo;* Heidenhain and his followers pointed out that the diuresis might be due to backing up of blood in the renal capillaries, thereby keeping more blood in contact with the epithelial cells, which, according to the Heidenhain theory, separated urine from the blood by a process of active secretion. The discovery of Heidenhain that a blue dye injected into an animal just before death was found to be present in the cells of the convoluted tubules, but not in the glomeruli, was thought to be proof of the secretion theory.

Both theories have been reveiwed by A. R. Cushny in his excellent monograph on "The Secretion of the Urine." In spite of Heidenhain's experiment with the blue dye, Cushny concludes that the weight of evidence favors the filtration theory of Ludwig.

Within the past few months work has appeared which seems to decide, in a manner that must delight the soul of the physiologist, this long-fought debate. A. N. Richards, Professor of Pharmacology at the University of Pennsylvania, and O. H. Plant* seem to have proved conclusively that the kidney works by filtration, not by secretion. Their work is based upon animal experiments in which the amount of blood driven through the kidney in a given period of time is a known quantity alterable at will. This was accomplished by connecting the carotid artery of a rabbit with a graduated syringe, by which the blood was drawn from the carotid and reinjected into the abdominal aorta, the aorta having been ligated above the renal artery and below the point of anastomosis with the pump. The blood thus driven through the kidney returned to the general circulation through the renal vein. With a known quantity of blood passing into the kidney, the blood pressure within that organ was altered by stimulation of the splanchnic nerve, by the injection of adrenalin and of pituitrin, and by partial occlusion of the renal vein. It was found that the changes in the output of urine varied as did the renal blood pressure. In other words, the blood pressure within the kidney was found to be the cause of the elimination of urine. If the kidney function were due to the secretory activity of the epithelium, blood mass and not blood pressure would be the determining factor. By showing that the output of urine varies, while the blood mass remains the same, Richards and Plant have proved the filtration theory to be correct.

The behavior of the kidney under the influence of splanchnic stimulation and of certain drugs, such as adrenalin, has led these investigators to attribute the consequent diuresis to a contraction of the arterioles going to and from the glomeruli, a contraction which affects the calibre of the efferent vessel more than that of the afferent one because the former is already of smaller diameter. As a result, the blood pressure within the capillaries of the glomeruli is increased.

This phenomenon has even been observed by Richards and Schmidt in the glomerulus of the frog's kidney. Under adrenalin stimulation, the capillaries have been seen to dilate and to fill with corpuscles. It has been further noted that under conditions of moderate blood flow only a fraction of the glomeruli receive blood. As the renal blood pressure increases, more glomeruli become filled and diuresis results.

This fascinating and scientifically beautiful research is epochal, so far as study of the kidney is concerned. It opens the door to a thorough understanding of renal function and to further discoveries of the greatest importance.

*Richards, A. N., and Plant, O. H.: American Journal of Physiology, vol. lix, Feb. 1, 1922, pp. 111-203.

A REPLY TO DOCTORS BULKLEY AND LITTLE.

THE BOSTON MEDICAL AND SURGICAL JOURNAL of January 26, 1922, contained a review of Dr. Bulkley's book on "Cancer and Its Non-Surgical Treatment." The reviewer commented favorably on Dr. Bulkley's effort to find a cause for cancer, and upon the excellent supportive treatment given by him to his patients. He condemned the author's opinion that his method is more efficient than surgery in the treatment of such cancers as can be removed surgically.

Recent issues of THE JOURNAL (April 27, 1922, and May 11, 1922) have contained letters from Dr. Bulkley and from Dr. S. W. Little, attacking the above-mentioned review. Analysis of these letters shows that the writers have two fundamental objections to the review. First, it is anonymous. Second, it represents the narrow and prejudiced viewpoint of "the relatively few research and surgical autocrats and oligarchs" who "through wilful ignorance" ignore the truth as set forth by Dr. Bulkley.

It is not the wish of THE JOURNAL to enter into acrimonious debate, particularly with so sincere and earnest a worker as the author of the book in question. Nevertheless, the insinuation made by these two correspondents that THE JOURNAL'S reviewers are unwilling to stand by their guns deserves rebuke. For years it has been the custom for book reviews in this periodical to appear unsigned. In this instance THE JOURNAL is willing to depart from the habit of years, and to state that the Assistant Editor, Dr. George Gilbert Smith, wrote the review of Dr. Bulkley's book. Dr. Smith is on the staff of the Huntington Hospital for Cancer Research, and it is fair to assume that his views upon the book would represent the opinion of the majority of those who are making an intensive study of cancer.

The second objection to the review cannot be answered without entering into a discussion of the nature of cancer. Into this field of theory THE JOURNAL refuses to go. It candidly admits that it prefers to accept the opinions of such scientists as Duane, Bovie, and Francis Carter Wood, to mention a few nearest home, rather than to accept the assertion, unsupported by demonstrable data or by sound logic, of the two gentlemen whose correspondence called forth these paragraphs.

"None of my proofs," says Dr. Bulkley in his letter, "have ever been refuted or scientifically disputed." Without one scrap of experimental evidence to support his thesis that cancer is due to changes in the blood and can be cured by alterations in diet and mode of living which will neutralize those changes, Dr. Bulkley asks the individual stricken with cancer to neglect the opportunities offered by surgery and to trust his life to a theory built upon speculation. Among the 91 cases reported in more or less detail in his book, there is not one case of cancer, the nature of which was proved by microscopic examination of tissues, in which anything more than temporary improvement was obtained, except by the use of caustic applications in superficial growths, or by the use of radium, x-ray or surgery in deeper growths. Even the temporary improvement may be attributed to the local cleanliness which Dr. Bulkley carries out so carefully.

If Dr. Bulkley would apply the scrutiny of ordinary, scientific investigation to his results, he might be led to restate his thesis as follows: The local growth should be destroyed by chemical necrosis or by radiation or occasionally be removed by the knife. Meanwhile the patient should be supported by a simple diet low in protein, and elimination should be encouraged by diuresis and catharsis. This would be a fair statement of what his method attempts to do, and would show it to be a method of therapy based upon common sense. As it is, he attributes miraculous qualities to the constitutional aspect of his treatment, thereby confusing his medical readers and possibly seriously misleading such laymen as read his book. Meanwhile, he minimizes the really important factor, which is the local destruction of the growth.

DEDICATION OF THE JOHN COLLINS WARREN LABORATORY OF THE HARVARD CANCER COMMISSION.

ON Monday afternoon, May 15, the new wing of the Huntington Memorial Hospital, in the Harvard Medical School group of buildings, was dedicated and opened for inspection.

Dr. D. L. Edsall, dean of the Medical School, introduced Dr. Francis Carter Wood of New York, director of the Crocker Foundation for Cancer Research. Dr. Wood spoke of the development of scientific research; he pointed out that nowadays elaborate equipment is necessary in order to work out the finer details of past discoveries. The new building contains a laboratory of bio-physics. By means of this comparatively new science, the Harvard Cancer Commission is attacking the cancer problem from a new direction. It contains also other laboratories—a fact which makes for coöperation. A university should be surrounded by a number of institutes like this.

Dr. Wood believes that the leaders of thought in our universities are hampered by too much undergraduate teaching. They should be left free to work along new lines. Apparently unimportant discoveries may prove to be of the greatest practical value.

The work of the Harvard Cancer Commission has been characterized by its sanity and solidity; with the new equipment, much may be expected.

In regard to the treatment of cancer, Dr. Wood considers surgery the best method at present, although he realizes that it is a defective method in principle. Cancer consists of a group of runaway cells in the body. Dr. Wood hopes to see the problem solved by the use of x-ray and radium; these methods are not ideal; it would be even better if some drug could be discovered which would be a specific.

Study of the nature of cancer has been greatly aided by our ability to grow cancer in animals, a step in advance which has been developed in the Crocker Laboratory in this country, and in Japan and Denmark. The problem is to find some essential difference between cancer cells and normal cells; Dr. Wood and his colleagues have been working with this purpose, but the farther they get, the less differences they find.

Cancer is the last great unanswered question in medicine. Our present program should be to back up surgery, secure cases early, and study the effects of radium and x-ray.

At the conclusion of Dr. Wood's address, Dr. Henry P. Walcott, chairman of the Harvard Cancer Commission, spoke of the unremitting labors of Dr. John Collins Warren, to whose efforts, in large measure, the new building was due. He announced that the President and Fellows of Harvard College had voted that the laboratory shall forever bear the name of John Collins Warren.

The new building was then thrown open for inspection. Visitors were shown the new high voltage x-ray machine which was developed in this country by Professor William Duane and has been in operation at the Jefferson Laboratory for over three years. The completion of the new building has given the necessary opportunity for its application to clinical problems.

Dr. Bovie, assistant professor of bio-physics, had arranged a number of demonstrations in his laboratory, relating to the work done in that department.

REPORT OF THE BOSTON TUBERCULOSIS ASSOCIATION.

The eighteenth annual report of this active and efficient organization sets forth the objects of the association as follows:

To study and understand the problems in regard to tuberculosis in the city of Boston, and to endeavor to meet such problems. To give practical help in some way to those residents of the city suffering from the disease.

To coöperate with municipal and voluntary health and social organizations in combating the tuberculosis problem.

To give information both to the general public and to the medical profession concerning the latest and best methods of diagnosing and treating consumptives and handling the general tuberculosis situation.

To establish and to manage a Preventorium in the city of Boston, where children who have been exposed to tuberculosis and who are the future candidates for this disease may become so built up physically and so trained in the rules of hygiene that they will ward off tuberculosis in the future.

In pursuit of these objects, the association has made a study of the situation as regards the diagnosis, treatment and disposition of tuberculous patients in the out-patient departments of Boston hospitals. The committee in charge of this investigation recommends better reporting of cases of non-pulmonary tuberculosis; closer follow-up work on patients with a diagnosis of "phthisis?;" the establishment of contact clinics in outlying sections of the city; and a more general use of the "Confidential Exchange," in which cases diagnosed as tuberculous, or suspected of being so, are registered by the Social Service Department. Investigation has shown that of the 963 patients registered at the Exchange, 372 were reported by more than one clinic.

The Educational Committee reports the holding of a tuberculosis institute for physicians, attended by approximately 400; a modern health crusade instituted in certain Boston schools; the establishment of a Lecture Bureau; the preparation and distribution to Boston physicians of a list of hospitals sanatoria and out-patient departments; and the formation of a publicity department.

The report also contains brief addresses on "The Place of the Preventorium in the Anti-tuberculosis Campaign," by Dr. J. H. Elliott and Dr. Henry D. Chadwick.

A WARNING IN REGARD TO POST-GRADUATE STUDY IN VIENNA.

Under the date of March 24, 1922, the American Medical Association of Vienna sends out a circular letter describing the conditions which exist in regard to post-graduate medical study in Vienna. This letter states that the Association, which formerly sponsored a number of courses offered in Vienna and regulated the fees charged for these courses, has lately been unable to secure the coöperation of the lecturers; the latter have discriminated in the matter of fees against Americans, charging them ten times as much as they have charged Austrian physicians, and more than they have charged physicians of Swiss, Dutch, Italian or French nationality.

The policy of the Viennese lecturers would appear to be extremely short-sighted—a killing of the goose of golden egg fame. Before the war, from three to four hundred American physicians came to Vienna every year for post-graduate study. It is unlikely that many will go if they know the sort of reception they will find.

The desire for gain and the finer emotions never have been very intimate. Perhaps we have no reason to expect that the medical profession of Vienna would remember the contributions of food and clothing made by Americans to the children of their late foes. Some evidence of gratitude, however, would have gone far to hasten the renewal of friendly relations between the medical men of the two countries.

REPORT OF THE CANCER COMMISSION OF HARVARD UNIVERSITY.

THE ninth annual report of the Cancer Commission of Harvard University is at hand. The report of the Director, Dr. Robert B. Greenough, reviews the work of the Commission since its inception in 1899. Its earlier activities were directed chiefly towards a scrutiny of the various theories of cancer causation, and resulted in rejection of the parasitic theories. A study of cancer in mice was carried on at the same time.

In 1912 the Huntington Hospital was opened, and a small quantity of radium was secured. The addition of a much larger amount in 1916 increased the supply of radium to an amount valued at about $100,000. Since that time the clinical activities of the hospital have increased steadily. In 1920-21, 647 operations were performed; 1420 new patients were examined, of whom 924 had carcinoma, 34 had sarcoma, and 50 had other malignant conditions.

The laboratory departments of the Cancer Commission have also been productive. Professor Duane has been working upon a new x-ray machine which will produce rays resembling the gamma rays of radium. A new laboratory building, in which the x-ray will be installed, has been erected, closely connected with the hospital. There will also be laboratories for chemical, bio-physical and pathological investigations.

CINEMATOGRAPHIC INSTRUCTION.

ON April 28, 1922, the Society for Cinematographic Instruction held an inaugural meeting in New York. About one thousand physicians and dentists attended. Addresses were given by Dr. George D. Stewart, president of the New York Academy of Medicine; Dr. Samuel A. Brown, dean of Bellevue Hospital Medical College; Dr. Otto Lurgui, editor of *Dental Items*, and Dr. James S. Edlin, president of the society. Several demonstrations of the process were given. The functions of the society are set forth in the following statement:

"The supreme purpose for which the society was founded was to raise the science of cinematography, in its application to medicine and allied subjects, entirely out of the field of commercialism. In this manner it is possible to make this valuable adjunct to teaching immediately available to the individual physician, surgeon and dentist as well as to institutions which have recognized and taken into account this new factor of actual visualization in connection with the teaching of medicine and allied subjects. It is not intended to supersede but to supplement the present courses of instruction, and in conducting this work through the society it is brought, from a standpoint of cost, within the reach of all. A member in any part of the country will have the resources of the society at his command to present any new idea, invention or technique to the profession at large in the most vivid and rapid manner possible, and, in like manner, he may witness the work of the ablest men in the profession both in this country and abroad."

RURAL HEALTH AND MEDICAL SERVICE.

A LETTER over the names of Eugene R. Kelley, State Commissioner of Health; Mrs. William Lowell Putnam; Dr. Enos H. Bigelow, Chairman of Public Health Committee of the Massachusetts Medical Society; Herbert C. Parsons, Deputy Commissioner of Probation; Arthur W. Gilbert, D.Ph., State Commissioner of Agriculture, and Dr. Paul W. Goldsbury, Secretary of the Executive Committee, appeared in the Springfield *Republican* under date of May 11, 1922, relating to the subject of "Rural Health Betterment." According to the letter, this is a voluntary organization which has been studying the problems indicated by the title of the article. After referring to well-known facts relating to insufficient medical service in rural sections the suggestions are made that more points of contact between medical leaders and isolated practitioners should be afforded and broader policies of graduate and clinical instruction should be brought about through construction and utilization of hospitals.

The argument is advanced that more physicians should have the advantages incident to membership on hospital staffs, and the routine

examination of school children is urged. The adoption of these suggestions would, it is claimed, result in better appreciation of the doctors' services to the community and more satisfactory opportunities for practitioners.

The communication suggests that contributions amounting to five thousand dollars would inaugurate activities which in time would bring about the desired results.

Although the standing of the members of this committee is a guarantee of the quality of work to be done under their direction, it may be difficult to secure responses before definite plans are made public. It is beyond question that the opportunity for valuable work exists, but with the multitude of appeals now being made for contributions, people who are able to finance new projects are inclined to wait until the details are worked out.

However, money given would be wisely expended.

NOTES FROM THE WASHINGTON MEETINGS BY DR. CHARLES F. PAINTER.

The introductory paper by Dr. E. V. McCollum of Johns Hopkins dealt with the general problem of diet as modern Americans view it, pointing out the fact that in the use of such a large amount of white-flour bread and prepared cereals, especially those which are cooked, and the lack of the general use of milk, roots and green vegetables such as are used for the making of salads, our dietary is lacking in a certain balance which is undoubtedly disadvantageous.

The next two papers, by Dr. Mendel and Dr. Sherman, reviewed the experimental work which is being done in the laboratories at Yale and Brown universities in an endeavor to discover the sources and distribution of those elements in food, known respectively as Vitamin B and Vitamin C, in which so many of our dietaries are lacking and the presence of which would do much to forestall the development of diseases which are properly decribed as nutritional and which flourish where these elements are lacking in the food supply.

The fourth paper was by Dr. Paul G. Shipley of Johns Hopkins and was interesting in that it pointed out from an experimental viewpoint the way in which rickets may be developed in animals. The rat was the animal upon which interesting investigations have been carried out, and the results of the experimentation show that rickets, at least in the rat—and there is a good deal of evidence that the same thing holds true in the human—is due to a disturbance in the ratio of phosphorus and calcium in the dietary. That is, rickets may be produced in the rat when the amount of *calcium* in the food is reduced below the normal content, and it may also be produced when *phosphorus* is reduced below the normal content, provided in the first case that phosphorus is present in the normal amount, and by the same token in the second instance if the calcium is present in the normal amount; the whole point being that the ratio between the two elements must be disturbed. If the ratio is maintained the same, even though the quantity of either one is present in abnormal amounts, there will be no rickets. He also brought forth evidence to show that sunlight and certain artificial lights were capable of influencing the recovery from rachitic conditions when the experimental animal was subjected to their influence.

The paper of Dr. Joseph Goldberger of the United States Public Health Service was concerned with the question of diet in the treatment of pellagra, there being clinical and experimental evidence to the effect that pellagra is a nutritional disease and is probably dependent upon the absence of a fourth vitamin, known as Vitamin D.

The last paper was by Dr. L. Emmett Holt of New York and was a review of the experimental findings in relation to these vitamin studies in their practical application to pediatric practice in particular. He indicated a sympathetic interest in the results of experimentation so far carried out. He deprecated the commercial exploitation of the various vitamins as tending to carry the public too far ahead of the scientifically established value of vitamins in dealing with practical matters, but seemed to be of the opinion that it was a very suggestive field in which to work and that already much that was valuable and conclusive had been brought out.

In the Orthopedic Section, I was not present the first day and so heard none of the papers allotted to the session on Monday, May 1.

In the second day's session, on Tuesday, May 2, the two papers that stood out conspicuously were those of Dr. J. M. T. Finney on "Spasmodic Torticollis" and by Dr. Murk Jansen of Holland on "Biological Laws in Orthopædics."

Finney's paper was a report of his experience, extending now over a period of 20 years and including a series of 27 cases of spasmodic torticollis operated upon by a radical method. The method consists in resection of the upper two posterior cervical nerve roots, always on the side toward which the head deviates, and sometimes upon both sides, together with the occipital major and minor nerves. In his earlier work he resorted to muscle resection as well as nerve resection, but in the later cases he has omitted the muscle resection. He was able to

present a series of results which had been of sufficient duration since operation to justify one in the belief that something approximating a cure had been secured in these cases, far in excess of anything that had been obtained by any other method heretofore employed. The paper included an exhaustive study of the methods that had been used by various operators from the very first recorded case down to the present time, together with a dissection on the cadaver which made very clear the steps of the operation which he has employed. This operation is a refinement of the procedure originally devised by Dr. W. W. Keen of Philadelphia some years ago.

Dr. Jansen's paper was a study of the laws of growth in the skeletal development, particularly as they may be influenced by prenatal and postnatal influences tending to retard the processes of growth, and showing how the operation of these laws tends to explain many of the deformities which are the subject of a great deal of the practice of orthopædic surgeons.

There was also a paper of some interest by Dr. George Barrie of New York, on the subject of "Hemorrhagic Osteomyelitis," which was an attempt to show that the so-called giant cell sarcoma was not a neoplasm at all, but was a type of infection to which hemorrhagic osteomyelitis more closely expresses the pathological condition than does giant cell sarcoma. He bases his claim for this viewpoint upon his belief that the giant cells so largely predominating in the cellular elements observed in tissue removed from cavities in bone afflicted by these disturbances were scavenger giant cells, and not true sarcomatous cells. The paper was not discussed by anyone with a pathological viewpoint and the impression left was that a "Scotch verdict" would have to be rendered upon Dr. Barrie's claims.

On Wednesday, the most significant papers presented were Dr. J. J. Nutt's of New York upon "Further Observations on the Operation of Intraperineural Neurotomy in Spastic Conditions." The introduction of this operation was an attempt to find something that would be less radical and therefore attended by a lesser mortality, at the same time that it accomplished the purposes of some of the more extensive operations upon the spinal nerve roots in dealing with spasticity. A considerable number of cases had been operated upon by this method at the New York State Orthopædic Hospital with a notable improvement in the functioning capacity of the patients.

A second paper by Dr. Murk Jansen upon "Coxa Plana and Its Causation"—discussion by Dr. D. B. Phemister of Chicago and Dr. Freiberg of Cincinnati—was productive of the greatest amount of interest. The author's contention was that coxa plana, or, as it is perhaps more frequently called, Legg-Perthe's disease, was the result in many cases of congenital abduction of the innominate bone, or ilium varum, resulting in the production of a shallow acetabulum. In consequence of this anatomic disarrangement, the biologic laws whose influence he had called attention to in the paper of the previous day had appeared to produce the effects which are recognized in the deformity as clinically observed.

The third paper of significance was a report of the Commission on Stabilizing Operations upon the Foot. This is a report of a commission appointed by the Orthopædic Association to study the comparative value of the various methods of securing a stable foot in patients, the musculature of whose legs has been so seriously impaired by infantile paralysis that the functioning value of the foot has been seriously interfered with. The Commission had studied in the various clinics of the country the methods employed by many operators and had concluded that the two best procedures were the astragalectomy of Whitman and an arthrodesis of the ankle joint performed by denuding the cartilage from the superior and inferior surfaces of the astragalus together with the cartilage between the astragalus and the scaphoid and also from those portions of the external and internal malleoli normally in contact with the sides of the astragalus. This was particularly applicable to those cases where there was toe drop. The calcaneal deformities were more suitable for the astragalectomy.

NEWS ITEMS.

THE WORCESTER DISTRICT MEDICAL SOCIETY.—At the annual meeting of the Worcester District Medical Society, a report of which will be found in the previous issue, much appreciation was expressed by the members for the splendid dinner that was served and for the entertainment provided after the dinner. Many of the fellows visited the manufacturing establishments in the vicinity, and a vote of thanks was given the Clinton members of the society for their hospitality. At the business meeting Dr. Homer Gage spoke of the need of a building for the medical library and suggested that other towns of the size of Worcester had buildings to house their libraries and for medical meetings. He said that there had recently come upon the market a house which was very well equipped for the use of the medical society and which was sold at a moderate price. On motion of Dr. Ellison of Spencer it was voted that the president appoint a committee of five to consider the question of a per-

manent home for the society. The committee will be announced later.

The Worcester School Board gave a hearing to the Board of Health, May 5, in which the chairman of the board, Dr. Edward H. Trowbridge, spoke in favor of its petition for the application of the Schick test to the Worcester school children. He stated that in a communication from the Department of Health at Dallas, Texas, it was denied that any deaths had resulted from the Schick test in Dallas. He called upon Dr. White of the State Board of Health to describe the test and methods of making the material for the test. Dr. White was questioned very minutely by members of the board and opponents of the test in the audience. Many physicians were present and all spoke in favor of the test. A few opponents were present and voiced their objections, which seemed to be based upon a misunderstanding of the test and inaccurate knowledge of the results. The board will vote on the petition of the Health Board at the next meeting.

The grand jury has returned an indictment against Dr. Horace G. MacKerrow of Worcester, a colored physician, in which he is charged with misconduct. The complainant, Mrs. Lee Shee of Worcester, has sued him for damages of $20,000 in the civil court.

The annual meeting of the Norfolk District Medical Society was held according to schedule as published in the issue of May 4, and the list of officers presented by the nominating committee was elected without change.

On Friday, May 12, Dr. Sarah Jordan was the speaker at the staff luncheon of the Worcester State Hospital. The topic was "Basal Metabolism," and a discussion followed the reading of her paper. It is planned to have the basal metabolism tests applied to a group of mental cases in this hospital.

William A. Bryan, *Superintendent.*

Complaint against Dr. Phillip A. E. Sheppard.—On May 10, 1922, the Board of Registration in Medicine conducted a hearing on a complaint alleging unprofessional conduct by Phillip A. E. Sheppard in treating a patient.

It has been alleged that Dr. Sheppard has been associated with Dr. Abrams of San Francisco through the medium of the United States mails for the purpose of securing opinions of ailments. *The Journal of the American Medical Association* has published accounts of the methods of Dr. Abrams.

The hearing before the Board of Registration in Medicine has been adjourned to May 31, 1922.

Messrs. Nason and Proctor are attorneys for Sheppard.

The Italian Medical Society.—This active society has a membership of 30 Italian physicians and is presided over by Dr. Gaetano Praino.

Two women physicians have recently been admitted to membership: Dr. Ilia Galliani, a graduate of Tufts Medical School, and Dr. Rose Yannini, a graduate of Middlesex College of Medicine and Surgery.

The last meeting of the society was held at the Copley-Plaza. At this time Dr. Antonio Satler of New York, who was physician to Enrico Caruso, read a paper. There are about 40 Italian physicians in Massachusetts. Women physicians of Italian birth might provide a great service in obstetric work, thereby developing a substitute for the objectionable midwives.

The Opinion of the Attorney-General.—At the suggestion of the Hon. B. Loring Young and with the endorsement of President John W. Bartol, the opinion of the Attorney-General is published in this issue because the subject is of great importance from a medical as well as political point of view.

Death Rate in Boston.—During the week ending May 13, 1922, the number of deaths reported was 205, against 185 last year, with a rate of 13.99. There were 25 deaths under one year of age, against 39 last year.

The number of cases of principal reportable diseases were: Diphtheria, 61; scarlet fever, 49; measles, 207; whooping cough, 10; typhoid fever, 2; tuberculosis, 28. Included in the above were the following cases of non-residents: Diphtheria, 1; scarlet fever, 6; measles, 2; tuberculosis, 5. Total deaths from these diseases were: Diphtheria, 3; whooping cough, 1; tuberculosis, 9. Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 1.

Miscellany.

OPINION OF THE ATTORNEY-GENERAL OF MASSACHUSETTS ON THE CONSTITUTIONALITY OF THE SHEPPARD-TOWNER BILL, HOUSE 1660.

To the Honorable Senate and House of Representatives, State House.

Gentlemen:—You have requested my opinion on the following questions:

"(1) Is the act of Congress, approved November twenty-third, nineteen hundred and twenty-one, entitled 'An Act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes,' within the constitutional powers of the federal government?

"(2) Has the Commonwealth of Massachusetts any right, as a sovereign State, to question the constitutionality of said act?

"(3) Would the Commonwealth of Massachusetts, by the acceptance of said act, waive its rights as a sovereign State, if such rights exist, to contest the constitutionality of said act before the courts of the United States?

"(4) If, in his opinion, said act is unconstitutional, what procedure can the Commonwealth adopt to raise the question of constitutionality?"

I. The act of Congress, approved November 23, 1921, entitled "An Act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," commonly known as the Sheppard-Towner Act, authorizes annual appropriations "to be paid to the several states for the purpose of coöperating with them in promoting the welfare and hygiene of maternity and infancy." It contains provisions substantially as follows:

It authorizes the appropriation, for the purposes of the act, of $480,000 for the current year and $240,000 for subsequent years, for a period of five years, to be equally apportioned among the several states, and an additional sum of $1,000,000 a year, for a period of five years, to be apportioned $5,000 to each state and the balance among the states in proportion to their population, with a proviso that no payment out of the additional appropriation shall be made in any year to any state until an equal sum has been appropriated by such state.

The act creates a "Board of Maternity and Infant Hygiene," with certain supervisory powers. It provides that the "Children's Bureau of the Department of Labor" shall be charged with the administration of the act, and gives the Children's Bureau all necessary powers to coöperate with the states in such administration, for which purpose the Children's Bureau may deduct an amount not exceeding five per cent. of the additional appropriations in any year.

Every state is required, in order to secure the benefits of the appropriations authorized, through its Legislature to accept the provisions of the act and to designate or authorize the creation of a state agency to coöperate with the Children's Bureau.

Any state desiring to receive the benefits of the act is required by its agency to submit to the Children's Bureau detailed plans for carrying out the provisions of the act within such state, such plans to be subject to the approval of the board.

Within 60 days after any appropriation under the act, the Children's Bureau is directed to make the apportionment provided for, to certify to the Secretary of the Treasury the estimated expense of administration, and to certify to the Secretary of the Treasury and to the treasurers of the various states the amount apportioned to each state. Within the same period and from time to time thereafter, the Children's Bureau is directed to ascertain the amounts appropriated by the several states and to certify to the Secretary of the Treasury the amount to which each state is entitled by reason of such appropriation.

Each state agency coöperating with the Children's Bureau is required to make such reports concerning its operations and expenditures as shall be prescribed by the Children's Bureau, which may, subject to the supervision of the board, withhold the certificate authorizing payment to any state whenever it is determined that the agency thereof has not properly expended the money paid to it or the moneys required to be appropriated by the state for the purposes of the act, an appeal being given from such determination to the President of the United States.

Thus in effect a system is created by which appropriations are to be made by the federal government and the states which accept the provisions of the act, plans are to be submitted to federal boards, the nature of which appears to be wholly undetermined, except that they must have some relation to the "welfare and hygiene of maternity and infancy" and are subject to certain restrictions stated in the act. Those plans are to be administered by officials, agents and representatives of the Children's Bureau in coöperation with the different state agencies, and control over the conduct of the state agencies is vested in the Children's Bureau and the board by the provision authorizing the withholding of the federal appropriation in cases where it is determined as to any state that federal or state funds have not been properly expended.

The purpose and effect of the federal Constitution was to secure a federal government with limited and enumerated powers, for national purposes, reserving all other powers to the states and the people. McCulloch v. Maryland, 4 Wheat. 316, 405; United States v. Cruikshank, 92 U. S. 542, 549-551; Kansas v. Colorado, 206 U. S. 46, 81. The powers expressly granted to Congress, including the power to make all laws necessary and proper for carrying the powers enumerated into execution, are all stated in Article I, Section 8, of the Constitution. All powers not granted to the United States by the Constitution are reserved by the Tenth Amendment to the states or the people. United States v. Cruikshank, 92 U. S. 542, 551.

The powers given to the federal government are only those which are necessary to the existence and effective maintenance of the nation. There is no grant of power to Congress to regulate the internal affairs of the states (excepting that given by the Eighteenth Amendment). The police power is a necessary part of the sovereign powers of the states, and was reserved to them by the Tenth Amendment.

Each state has the right and duty to provide for the general welfare of its people, and in those respects the authority of the state is complete, unqualified and exclusive. New York v. Miln, 11 Pet. 102, 139; *In re Rahrer*, 140, U. S. 545, 554, 555; Keller v. United States, 213 U. S. 138; Hammer v. Dagenhart, 247 U. S. 251, 274-276; The Federalist, No. 45.

The present act vests in the federal government certain powers relating to maternity and infancy. These matters manifestly fall within the scope of the police power. Most of the expense will be borne by a small minority of the states, while a majority of the states will receive a corresponding benefit for which they do not pay. If the United States possesses no police power, as the Supreme Court of the United States has often held, it would seem that this act is an attempt to usurp an authority reserved to the states and to exercise it at the expense of a minority of them, of which this commonwealth is one.

It appears from the debates in Congress that the proponents of this measure attempt to support it upon the ground that it is a provision for the general welfare of the people of the United States. The words "general welfare" occur twice in the Constitution, once in the preamble and once in Article I, Section 8.

The preamble is as follows:

"We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this CONSTITUTION for the United States of America."

The preamble, however, contains no grant of power. It is a mere statement of the purposes effected by the Constitution itself. Jacobson v. Massachusetts, 197 U. S. 11, 22; Story on the Constitution, §462.

I pass, therefore, to a consideration of Article I, Section 8, of which the first clause is as follows:

"The congress shall have power—to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts and excises shall be uniform throughout the United States; . . .".

It is plain that the words "to pay the debts and provide for the common defence and general welfare of the United States" are not a substantive grant of power, but a qualification of the first enumerated power "to lay and collect taxes, duties, imposts and excises." Argument is not needed to support this proposition because the authority for it is conclusive.

The history of the adoption of this clause is given in George Ticknor Curtis' "Constitutional History of the United States, Vol. I, pp. 518-521, as follows:

In the first draft of the Constitution the power to tax was stated in what was there Article VII, Section 1, in the following words:

"The Legislature of the United States shall have the power to lay and collect taxes, duties, imposts, and excises."

5 Elliot's Debates, p. 378.

It was thought that there should be some restraint on the revenue power, with a view to prevent perpetual taxes of any kind. The matter was referred to a committee of detail, which reported the following addition:

"For payment of the debts and necessary expenses of the United States; provided that no law for raising any branch of revenue, except what may be specially appropriated for the payment of interest on debts or loans, shall continue in force for more than —— years."

5 Elliot's Debates, p. 462.

This was referred to a grand committee, which introduced an amendment making the whole clause read as follows:

"The legislature shall have power to lay and collect taxes, duties, imposts, and excises, to pay the debts, and provide for the common defence and general welfare of the United States."

5 Elliot's Debates, pp. 506, 507.

This amendment was unanimously adopted. The provision for uniformity was added later.

5 Elliot's Debates, p. 543.

In Loughborough v. Blake, 5 Wheat. 317, 318, Chief Justice Marshall said:

"The 8th section of the 1st article gives to Congress the 'power to lay and collect taxes, duties, imposts and excises,' for the purposes thereinafter mentioned."

Again in Dobbins v. Commissioners of Erie County, 16 Pet. 435, 448, 449, the court said:

"The revenue of the United States is intended by the Constitution to pay the debts, and provide for the common defence and general welfare of the United States; to be expended, in particulars, in carrying into effect the laws made to execute all the express powers, 'and all other powers vested by the Constitution in the government of the United States.'"

In Ward v. Maryland, 12 Wall. 418, 428, the power to tax was referred to as existing "by virtue of an express grant for the purpose; among other things, of paying the debts and providing for the common defence and general welfare."

In United States v. Boyer, 85 Fed. 425, it was held that the "general welfare clause" did not confer any distinct and substantial power on Congress to enact any legislation, but constituted a limitation upon the taxing power.

The text writers also are agreed that the words "to pay the debts and provide for the common defence and general welfare of the United States" are to be construed as if they were preceded by the word "in order," or similar words amounting to a declaration of purpose. Story on the Constitution, §§906-911; Miller on the Constitution of the United States, pp. 229-231.

The form of the Constitution lends strong support to this construction. The document in the rolls of the Department of State shows that in Article I, Section 8, each of the enumerated powers is numbered, from 1 to 18 inclusive, the first being the power "to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts and excises shall be uniform throughout the United States;" and the second the power "to borrow money on the credit of the United States;" and that each power is separated by a semi-colon. Curtis' "Constitutional History of the United States," Vol. I, pp. 728, note, 731.

While it seems to be definitely settled that the words "to pay the debts and provide for the common defence and general welfare of the United States" are not a substantive grant of power, there has been from the time the Constitution was adopted a contraverted question regarding the interpretation of those words and their bearing on the power of Congress to appropriate money. Hamilton held that Congress had a power to appropriate as broad as the power to tax, and that the revenues of the United States could be appropriated for any public purpose connected with the general welfare of the United States. This doctrine was stated by Hamilton in his "Report on Manufactures" in 1791. It was adopted and followed by Story (§§975-992), and by President Monroe in his message respecting the bill for the repairs of the Cumberland Road, May 4, 1822. On the other hand, Madison held that the general welfare clause is merely descriptive of and limited by the specific grants of power to Congress contained in Section 8, and that the power to appropriate money is also confined to the enumerated powers. Madison expressed this view in The Federalist, No. 41, and the statement there made must be presumed to have had some effect in obtaining the ratification of the Constitution by the States. He renewed the same statement in his message vetoing the bill for internal improvements, March 3, 1817, and in a letter to Speaker Stevenson, dated November 27, 1830. Madison's view was supported and emphasized by Jefferson, as stated in his "Opinion on the Constitutionality of a National Bank," February 15, 1791. See Tucker's "Constitution of the United States," §§222-231.

The view that the general welfare clause is merely descriptive of the substantive grants of power which follow it in Section 8 is supported by the circumstance that provisions for the common defence are contained in the grants of power to declare war, to raise and support armies, to provide and maintain a navy, to make rules for the government and regulation of the land and naval forces, to provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions, and to provide for organizing, arming and disciplining the militia, while the other powers granted in that section are clearly provisions for the general welfare of the United States.

The question as to the extent of the general welfare clause in its application to appropriations of money was expressly reserved by the Supreme Court in United States v. Realty Co., 163 U. S. 427, 440, where the court said:

> "It is unnecessary to hold here that Congress has power to appropriate the public money in the treasury to any purpose whatever which it may choose to say is in payment of a debt or for purposes of the general welfare. A decision of that question may be postponed until it arises."

But the question which I have to determine does not depend for its answer upon a solution of the controversy concerning the limits of the power of Congress to appropriate money. In fact, the Sheppard-Towner Act makes no appropriation of money. It merely purports to authorize sums to be appropriated, thereby announcing, it seems, an intention to appropriate at some future time. It does, however, establish a system by which states desiring to secure the benefits of promised appropriations are required to submit plans for carrying out the provisions of the act to designated federal authorities for their approval, to make appropriations to match federal appropriations, and to coöperate with the federal authorities in the administration of the act, subject to the supervision of those authorities, who, if they determine that either federal or state funds have not been properly expended, may withhold the federal appropriation. This, in my judgment, is not an appropriation bill, but an attempted exercise of power over the subject of maternity and infancy, and thus an incursion into the field of the local police power, reserved to the states by the Tenth Amendment. The objections to the act go further in that the proposed appropriations are not *general* in their application, but are confined to those states which accept the act and appropriate their own funds to be used for its purposes. Hamilton, in his "Report on Manufactures," cited above, although contending for the broad power of appropriation, says that "the object to which an appropriation of money is to be made must

be *general* and not *local.*" For this reason the appropriations, if made, in my opinion would not be for the "general welfare of the United States," even if those words are given the broadest signification. Indeed, it is yet to be determined that Congress has the power to appropriate to the states, according to any method of apportionment, revenues raised from the people of the United States for national purposes.

If the powers attempted to be exercised by the Sheppard-Towner Act are outside the powers conferred upon Congress by the Constitution and within the field of the powers reserved to the states, the act is not made constitutional and valid by the circumstance that those powers will only be exercised in or with respect to those states whose Legislatures accept it; for Congress cannot assume and the state Legislatures cannot yield the powers reserved to the states by the Constitution. They can only be granted to the federal government by an amendment to the Constitution. On this precise subject President Monroe, in his message vetoing the Cumberland Road bill, referred to above, holding that Congress had not the power, even with the consent of the states affected, to establish turnpikes with gates and tolls as internal improvements, said:

> "I am of the opinion that Congress do not possess this power; that the states, individually, cannot grant it; for, although they may assent to the appropriation of money within their limits for such purposes, they can grant no power of jurisdiction or sovereignty by special compacts with the United States. This power can be granted only by an amendment to the Constitution, and in the mode prescribed by it."

In reply to your first question I am therefore constrained to say that I am of opinion that the act referred to is not within the constitutional powers of the federal government.

II. Your second question, whether the commonwealth of Massachusetts has any right as a sovereign state to question the constitutionality of the act, and your fourth question, what procedure can be adopted to raise the question of constitutionality, will be considered together.

It is well established that any person whose rights are directly affected by an act of Congress may question its constitutionality before the court, and that it is the court's duty in a proper case, where an act of Congress infringes upon the provisions of the Constitution, to declare that act unconstitutional and void. Vanhorne's Lessee v. Dorrance, 2 Dall. 304, 308, 309; Marbury v. Madison, 1 Cranch 137; McCulloch v. Maryland, 4 Wheat. 316, 400, 401.

But the right to declare an act unconstitutional can be exercised only when proper parties are before the court in an actual controversy, involving the constitutional question in the determination of the rights of litigants. Steamship Co. v. Emigration Commissioners, 113 U. S. 33, 39; Muskrat v. United States, 219 U. S. 346, 361; Fairchild v. Hughes, No. 148—October Term, 1921.

The most direct method of testing the constitutionality of the Sheppard-Towner Act, if not the only method, is by proceedings in equity against those officials of the federal government who are acting or preparing to act to carry its provisions into effect. By U. S. Const., Art. III, Sec. 2, the Supreme Court has original jurisdiction of all cases in which a state shall be a party. The inquiry, therefore, is in the first instance, whether the commonwealth may maintain such a suit in the Supreme Court as party plaintiff, and, secondly, whether the suit will lie against federal officials as parties defendant.

1. There are instances of suits brought by states which the Supreme Court has declined to entertain on the ground that they called upon the court to determine questions which were political and not judicial. The most noteworthy of these cases is Georgia v. Stanton, 6 Wall. 50, where the state brought an original bill to restrain the Secretary of War and other officers of the government from carrying into effect the so-called Reconstruction Acts. The court held that the rights for which protection was sought were rights of sovereignty, that no rights of persons or property were being infringed, and that the questions were political; and they dismissed the bill for want of jurisdiction. The decision, however, seems to go no further than Luther v. Borden, 7 How. 1, and Pacific Telephone Co. v. Oregon, 233 U. S. 118, holding that it is for Congress and not for the court to decide what is the established government in a state, and to enforce the constitutional guaranty of a republican form of government, the questions involved being political and beyond the judicial power.

On the other hand, the court has from early times entertained suits to determine which of two states had political jurisdiction over disputed territory, since such a controversy is clearly justiciable. Rhode Island v. Massachusetts, 12 Pet. 657, 736-738; Virginia v. West Virginia, 11 Wall. 39. More recently the jurisdiction has in many cases been sustained in suits by states to enforce their sovereign rights, and as *parens patriæ* or representative of their citizens.

The question whether a state may sue as representative of its citizens was presented but not settled in Louisiana v. Texas, 176 U. S. 1, 19. But in later decisions this question has been answered in the affirmative, and the distinction made in Georgia v. Stanton, 6 Wall. 50, between rights of property and rights of sovereignty has been disregarded. These decisions have made it plain that suits by states

will lie for the protection both of their own sovereign rights and of the personal and property rights and welfare of their citizens generally. On these grounds suits have been sustained to restrain interference with the flow of rivers and water supply, and pollution of the air. Jurisdiction is accepted broadly wherever the controversy is justiciable in its nature, in recognition of the fact that the states in joining the Union relinquished the right they would otherwise have had to seek remedies by negotiation or force, that there should be some remedy for the settlement of disputes, and that one may be found in the constitutional provisions giving the Supreme Court jurisdiction of suits by states. Missouri v. Illinois & Chicago District, 180 U. S. 208, 241; Kansas v. Colorado, 185 U. S. 125, 206 U. S. 46, 83, 84, 89; Georgia v. Tennessee Copper Co., 206 U. S. 230, 237; Virginia v. West Virginia, 220 U. S. 1, 27; New York v. New Jersey, 256 U. S. 296, 301, 302.

The question whether an act of Congress is in violation of the reserved powers of the states and therefore unconstitutional seems clearly to be justiciable, and the Supreme Court has so decided in Hammer v. Dagenhart, 247 U. S. 251. In that case the court held that a United States district attorney should be enjoined from enforcing an act of Congress prohibiting the transportation in interstate commerce of products of child-labor, on the ground that the law was an invasion of the local police power, reserved to the states by the Tenth Amendment.

Where an act of Congress encroaches upon the rights reserved to the states by the tenth amendment, any state affected thereby must have the right to resort to some tribunal for the protection of those rights or be without remedy. That the states themselves are entitled to such protection by the judicial power, and that it is the duty of the court, in a proper case, to hold such an act unconstitutional, and to grant relief, has several times been declared. Ableman v. Booth, 21 How. 506, 519, 520; Gordon v. United States, 117 U. S. 697, 700, 701, 705; Matter of Heff, 197 U. S. 488, 505; South Carolina v. United States, 199 U. S. 437, 448.

If, for reasons stated, the Sheppard-Towner Act is unconstitutional as representing an attempt by Congress to exceed its constitutional powers and to usurp the rights reserved to the states by the Tenth Amendment, it follows that the commonwealth in a proper case can raise the question of constitutionality by bringing suit in the Supreme Court, if and when it is affected by the act.

The act does not confer upon the federal agencies created or designated by it any authority which operates in Massachusetts unless and until its Legislature accepts the act and makes the required appropriation. If the Legislature purports to accept the act, the right of the commonwealth subsequently to complain that the act is unconstitutional, as hereafter stated in reply to your third question, will be open to serious question. If the act is not accepted and does not become operative within the commonwealth, there would be no encroachment upon the police power of Massachusetts if the act should be put into effect in other states.

It does not follow, however, that the commonwealth is not affected if the act is put into effect in other states. The grants to such states are to be paid out of the federal treasury. That treasury is replenished by internal revenue taxes paid by the people of the several states. It has been estimated that 5.66 per cent. of those taxes are paid by the citizens of Massachusetts. If Massachusetts can and does accept the act it has been estimated that the return to it thereunder will be less than half the amount collected from its citizens. If Massachusetts does not accept the act its citizens will be taxed in order to carry into effect an unconstitutional law in other states. Assuming that a federal tax, otherwise lawful, imposed to raise revenues for lawful purposes, does not become unconstitutional because it taps and diminishes a source of revenue available to the states (Knowlton v. Moore, 178 U. S. 41; New York Trust Co. v. Eisner, 41 Sup. Ct. Rep. 506), it does not follow that a state whose revenues are diminished by federal taxation imposed in order to execute an unconstitutional law is not so affected thereby that it cannot attack that expenditure in the Supreme Court of the United States. If the state is without remedy it is under the dilemma of consenting to be stripped of a power reserved by the Tenth Amendment, in order to share in such unconstitutional benefits as Congress may choose to accord, or else of bearing unheard and without redress a part of the burden of conferring such alleged benefits on other states.

The right of Massachusetts to bring suit may be supported upon the further ground that the rights of its taxpaying citizens are invaded. It is doubtful whether taxpayers can maintain suits in their individual capacity to restrain an unconstitutional expenditure. See Bradfield v. Roberts, 175 U. S. 291; Millard v. Roberts, 202 U. S. 427, 438. There is, however, in my opinion, strong argument for the view that the state can present the question on their behalf as *parens patriæ*, following the analogy of the nuisance cases already cited. If neither the state nor the taxpayer can sue, then there can be no remedy against such an unconstitutional exercise of power by Congress, although the issue is plainly justiciable.

The novelty of the question prevents a more definite answer to your inquiry. It is for the

Legislature, in its wisdom, to determine whether a question of such vital importance to the state, involving, as it does, a principle capable of indefinite application in the broad and paternalistic field of social welfare, should not be submitted for adjudication to our highest court.

2. It remains to be considered whether suit may be brought against the federal officials whose duty it is to administer the act.

In Mississippi v. Johnson, 4 Wall. 475, the Supreme Court denied leave to file a bill against President Johnson to restrain him from putting the Reconstruction Acts into force. In Georgia v. Stanton, 6 Wall. 50, the Supreme Court dismissed a similar bill, as already stated. The circumstances which led to the passage of these bills, which were designed to create a temporary government for the seceded states, and the effect of later decisions afford ground for belief that those decisions would not govern in the present case.

Later cases hold that suit will lie where rights of property are unlawfully invaded by federal officers, and where the United States is not a defendant or a necessary party. United States v. Lee, 106 U. S. 196, 204-208; Noble v. Union River Logging R.R., 147 U. S. 165, 171, 172; Belknap v. Schild, 161 U. S. 10, 18; School of Magnetic Healing v. McAnnulty, 187 U. S. 94; Lane v. Watts, 234 U. S. 525, 540. Furthermore, the court has frequently held broadly that state officers clothed with some duty in regard to the enforcement of the laws of the state may be enjoined from proceeding under an unconstitutional statute which they are about to enforce to the plaintiff's injury, and that a suit for such injunction cannot be regarded as a suit against the state. Osborn v. United States Bank, 9 Wheat. 738, 846, 857; Davis v. Gray, 16 Wall. 203; Pennoyer v. McConnaughy, 140 U. S. 1, 10; Smyth v. Ames, 169 U. S. 466, 518, 519; *Ex parte* Young, 209 U. S. 123, 149, 155, 156; Western Union Telegraph Co. v. Andrews, 216 U. S. 165; Truax v. Raich, 239 U. S. 33, 37; Greene v. Louisville & I. R.R. Co., 244 U. S. 499, 506, 507. Recently this same principle has also been extended to suits against federal officers seeking to restrain them from acting under statutes alleged to be unconstitutional. Philadelphia Co. v. Stimson, 223 U. S. 605, 619, 620; Wilson v. New, 243 U. S. 332; Hammer v. Dagenhart, 247 U. S. 251. Federal jurisdiction does not depend on diversity of citizenship, but exists because such suits arise under the Constitution or laws of the United States. *Ex parte* Young, 209 U. S. 123, 143-145.

In the *National Prohibition Cases*, 253 U. S. 350, two of the cases were suits by the States of Rhode Island and New Jersey against the Attorney-General and the Commissioner of Internal Revenue, seeking to have the Eighteenth Amendment and the Volstead Act declared unconstitutional and void, and to enjoin the enforcement of the act. The main ground on which unconstitutionality was claimed was that the amendment and the act constituted an interference with the sovereign rights of the states to govern their internal affairs, that is, the local police power. Original bills in each of the two cases were permitted by the court to be filed (252 U. S. 570), and no question of jurisdiction was raised or reserved in the opinion by which all the suits were dismissed on the merits.

The opinion in the recent case of Texas v. Interstate Commerce Commission, No. 24 Original—October Term, 1921, contains an intimation that the original jurisdiction of the court over suits where states are parties may be somewhat narrow, but the decision of the case goes on the ground that necessary parties were not before the court.

I conclude, therefore, that assuming that the commonwealth may bring the suit as party plaintiff, the fact that the defendants would be federal officials would not defeat it.

III. Your third question is whether the commonwealth by accepting the act would waive any right it may have to contest the constitutionality of the act before the courts of the United States.

The act provides that any state in order to secure the benefit of federal appropriations must accept the provisions of the act, designate the state agency with which the Children's Bureau is to coöperate, and submit to the Children's Bureau detailed plans for carrying out the provisions of the act within the state. It contemplates also appropriations by the state to match federal appropriations. These provisions, it seems to me, must be construed as a proposal for a contract with the several states, which, when accepted by any state, would constitute an agreement by the state to be bound by the terms of the act, if such an agreement could be made. Whether the state, acting by its Legislature alone, or in any manner other than that provided by the Constitution itself, can contract away its sovereign rights is a matter of grave doubt. But apart from any question of the validity of such a contract, there would appear to be an inconsistency in accepting the benefits of the act and then bringing suit to avoid its obligations and effect.

I am therefore of opinion that the passage of an act by the General Court accepting the provisions of the Sheppard-Towner Act would place the commonwealth in a less favorable position to contest its validity.

Very truly yours,
J. WESTON ALLEN,
Attorney-General.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

As announced in last week's issue of THE JOURNAL, an innovation this year at the annual meeting of the Massachusetts Medical Society will be a series of practical demonstrations at the Harvard Medical School on Wednesday, June 14. These demonstrations will be given morning and afternoon, the annual discourse coming at noon, followed by luncheon on the terrace. The program of these demonstrations is as follows:

June 14, 1922

WEDNESDAY MORNING

From 9.30 to 10.30 o'clock

ONE HUNDRED AND FORTY-FIRST ANNIVERSARY

Harvard Medical School, Building C, Amphitheatre.

DEPARTMENT OF PHYSIOLOGY

Demonstrations and Papers, under the supervision of Alfred C. Redfield, M.D.

1. **"The Experimental Production of Traumatic Shock."**
   By Mr. F. R. Griffith.
2. **"The Growth of School Children."**
   By W. T. Porter, M.D.
3. **"The Distribution of Lead in Acute and Chronic Lead Poisoning."**
   By Miss Anne Minot.
4. **"The Pulmonary Arterial Pressure."**
   By C. K. Drinker, M.D.

From 10.30 to 11.30 o'clock

Harvard Medical School, Building E, Amphitheatre.

DEPARTMENT OF PHARMACOLOGY

Demonstrations by Reid Hunt, M.D.

1. **"The Newer Drugs of Greatest Value to the Practitioner."**
2. **"Latest Advances in Local Anaesthesia."**
3. **"New Therapeutic Agents and Their Value."**
4. **"Experimental Demonstration of Salvarsan."**

WEDNESDAY NOON

THE ANNUAL DISCOURSE

Harvard Medical School, Building C, Amphitheatre.

"The International Mind in Medicine."
By Kendall Emerson, M.D., Worcester.

From 1 to 2 o'clock

LUNCH WILL BE SERVED

to members on the Terrace on the payment of a small charge.

WEDNESDAY AFTERNOON

From 2 to 3 o'clock

Harvard Medical School, Building C, Amphitheatre.

DEPARTMENT OF CHEMISTRY

"Modern Blood Analysis."
By Otto Folin, M.D., and Helding Berglund, M.D.

From 3 to 4 o'clock

Harvard Medical School, Building E, Amphitheatre.

DEPARTMENT OF HYGIENE

Demonstrations under the supervision of M. J. Rosenau, M.D.

1. **"The Schick Test."**
2. **"The Wassermann Reaction."**
3. **"A Discussion on Botulism and Food Poisoning."**
4. **"Vaccines and Other Experimental Work on Pneumonia and Influenza."**

NATIONAL HOSPITAL DAY AT THE BEVERLY HOSPITAL.

NATIONAL HOSPITAL DAY, Friday, May 12, 1922, was observed at the Beverly Hospital by a clinic at 11 A. M. Doctors were present from Beverly, Danvers, Topsfield, Hamilton, Manchester, Salem, Lynn and Boston.

Post-operative cases of gall-bladder disease, pyloric ulcer, renal calculus and tubercular peritonitis were shown and discussed by Dr. P. P. Johnson of Beverly. Dr. Clifton L. Buck of Danvers read a paper on "Diabetes," and cases were shown. Dr. Albert E. Parkhurst of Beverly read a paper on "Basal Metabolism," with a demonstration of the Benedict Arnold apparatus. Dr. John D. Adams of Boston spoke on "Occupational Therapy."

The clinic was followed by a lunch which was served in the doctors' room of the new wing of the hospital.

Following the lunch the new wing was inspected by the visitors.

In the afternoon, the hospital and nurses' home was open to the public for inspection.

In the evening, graduating exercises were held in the nurses' home. The program was as follows:

March.
Prayer.....Rev. W. E. Jones
Chorus.....Training School Glee Club
Address.....Rev. Dr. Bayes
Solo.....Mr. Roy K. Patch
History, Life of Florence Nightingale,
Miss B. A. Carter
Chorus.....Training School Glee Club
Report of the Training School and Presentation of Diplomas and Pins.....Mr. John L. Saltonstall
Solo.....Mr. Roy K. Patch
Refreshments and Dancing.

Graduates, Class of 1922: Ruth E. Mehrffey, Elizabeth K. Ober, Dorothy I. Roberts, Dorothy M. Hoyt, Blanche A. Carter, Catherine Foote.

COMPLIMENTARY DINNER.

A COMPLIMENTARY dinner was given to Lieutenant-Colonel Fielding H. Garrison, M. C., U. S. A., at the Restaurant Madrillon on Monday, May 1, 1922, in Washington, D. C. Dr. Harvey Cushing presided and Dr. W. H. Welch addressed the company.

Dr. Garrison is the principal assistant librarian in the Surgeon-General's office, editor of the Index Medicus, and author of "An Introduction to the History of Medicine."

The following named friends of Dr. Garrison participated: Dr. William H. Welch, presiding; Abt, Isaac A.; Bitterman, Captain; Blumer, George; Borden, W. C.; Brown, H. M.; Cooke, G. Wythe; Corner, G. W.; Cullen, T. S.; Cushing, Harvey; Dana, Charles L.; Dock, George; de Schweinitz, George; Foley, Thomas;

Foote, John; Greene, R. W.; Halsted, W. S.; Hemmeter, J. C.; Hoeber, Paul B.; Jacobs, H. B.; Jackson, Edward; Kelly, H. A.; Kober, George M.; Matas, R.; Mallory, W. J.; Mencken, H. L.; Nichols, John B.; Noble, General Robert N.; Northington, Major; Packard, F. R.; Pleadwell, Captain F. L.; Reisman, David; Roy, P. S.; Rountree, L. G.; Ruhrah, John; Siler, Colonel J. S.; Seelig, N. G.; Streeter, E. C.; Stone, I. C.; Talbot, Fritz B.; Tasker, Major Arthur; Van Ingen, Philip; Vaughan, Victor; Viets, Henry; Welch, W. H.; White, William A.; Wood, Casey A.

THE WASHINGTON SESSION OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

At the Congress of American Physicians and Surgeons in its twelfth triennial session in Washington, D. C., May 2nd and 3rd, 1922, among the New England physicians who took part in the proceedings were:

Dr. Eugene A. Crockett of Boston, who read a paper on "An Unusual Cerebral Complication of Mastoid Operation Relieved by Sub-dural Drainage" before the American Otological Society.

Dr. H. C. Solomon and Dr. A. E. Taft of Boston, "The Effects of Anti-Syphilitic Treatment as Indicated by the Histological Study of the Cerebral Cortex in Cases of General Paresis," by invitation.

Dr. Stanley Cobb of Boston, "Electromyographic Studies of Paralysis Agitans," and Dr. Gilbert Horrax of Boston, by title, "A Consideration of the Dermal Versus the Epidermal Cholesteatomata Originating in the Cerebral Envelope," by invitation, before the American Neurological Association.

Dr. E. L. Oliver of Boston, "The Use of Ultra-Violet Light in Erythema Induratum," before the American Dermatological Association.

Dr. Joseph L. Goodale of Boston, "Vasomotor Disturbance of the Upper Air Passages and Sinus Disease"; Dr. Francis M. Rackemann of Boston, "Observations on Asthma," and Dr. Rockwell A. Coffin of Boston, "Experiments with Atmospheric Pressure in the Antrum of Highmore," before the American Laryngological Association.

Dr. Daniel F. Jones of Boston, "End-Results of Carcinoma of the Rectum"; Dr. Lincoln Davis of Boston, "End-Results of the Radical Surgical Treatment of Carcinoma of the Cervix Uteri"; Dr. Channing C. Simmons and Dr. E. M. Daland of Boston, "The Results of Operations for Carcinoma of the Lip at the Massachusets General Hospital from 1900 to 1919," by invitation; Dr. Charles L. Scudder of Boston, "Cases of Chronic Gastric and Duodenal Ulcer Treated by Operation at the Massachusetts General Hospital Clinic—Results"; Dr. Charles A. Porter of Boston, "An Analysis of My End-Results in Thyroid Surgery," and Dr. Frederic J. Cotton of Boston, "Wrist Fractures: Disabilities following: Restorative Operations," before the American Surgical Association.

Dr. John B. Hawes, 2nd, of Boston, "The Diagnosis of Juvenile Tuberculosis," and Dr. Samuel A. Levine of Boston, "Some Clinical Observations on Angina Pectoris," by invitation, before the American Climatological and Clinical Association.

Dr. Franklin W. White of Boston, "The Simultaneous Variation in Acidity of Gastric Contents in Different Parts of the Stomach"; Dr. I. Chandler Walker of Boston, "Sensitization Tests with Digestion Products of Proteins"; Dr. Joseph H. Pratt of Boston, "The Value of Vital Capacity Determinations in the Diagnosis and Treatment of Heart Disease"; Dr. Francis H. Williams of Boston, "The Treatment of Tonsils by Radiation from Radium Salts in 100 Cases"; Dr. Paul D. White of Boston, "Clinical Observations on Heart Block"; Dr. Henry A. Christian of Boston "Digitalis Effects in Cardiac Cases with Regular Rhythm"; Dr. Elliott P. Joslin of Boston, "The Clinical Aspect of Studies upon the Metabolism of Diabetes"; Dr. M. J. Rosenau of Boston, "Experimental Botulism with Special Reference to Serum Therapy"; Dr. James P. O'Hare of Boston, "The Relation between Arteriosclerosis and Blood Pressure," before the Association of American Physicians.

Dr. William C. Quinby of Boston "Hydronephrosis Associated with Anomalous Renal Blood Supply"; Dr. Arthur L. Chute of Boston, "Cases Illustrating the Origin of Certain Cases of Hydronephrosis," and "Case of Pelvic Kidney"; Dr. Richard F. O'Neil of Boston, "Some Cases of Hydronephrosis," and "A Case of Double Ureter and Double Renal Pelvis," and Dr. J. Dellinger Barney of Boston, "Gonococcus Infection of the Kidney with Report of a Case," before the American Association of Genito-Urinary Surgeons.

Dr. Z. B. Adams of Boston, "The Treatment of Congenital Dislocation of the Hip as Practiced by Professor Denucé at Bordeaux, France"; Dr. James B. Ayer of Boston, "Combined Cistern and Lumbar Puncture; an Aid in the Diagnosis of Compression of the Spinal Cord," by invitation; Dr. W. J. Mixter of Boston, "Fracture of the Spine with Cord Involvement—An Unsolved Problem," by invitation; Dr. Lloyd T. Brown of Boston, "Beef Bone in Stabilizing Operations of the Spine"; and Dr. Mark H. Rogers of Boston, "Pathology of Tuberculosis of Joints," before the American Orthopedic Association.

Dr. Maynard Ladd of Boston, "Presidential Address"; Dr. John Lovett Morse of Boston, "D'Espine's Sign in Childhood"; Dr. Fritz B. Talbot and Dr. Warren R. Sisson of Boston, "Studies of the Basal Metabolism of Premature Infants," by invitation, and Dr. Edwin H. Place of Boston, "The Dosage of Diphtheria Antitoxin, and Analysis of the Records of the South Department," before the American Pediatric Society.

Dr. J. Bronfenbrenner and Dr. Harry Weiss of Boston, "Serum Therapy of Botulism," by invitation: Dr. J. Bronfenbrenner and Dr. M. J. Schlesinger of Boston, "On the Nature of Botulinus Toxin"; Dr. N. Chandler Foot of Boston, "The Pathology of the Dermatitis Caused by the Texan Puss-Caterpillar (megalopyge opercularis)"; and Dr. Myrtelle M. Canavan of Boston, "This Histology of the Superior Lacrymal Gland in Cases of Mental Disease and Defect," before the American Association of Pathologists and Bacteriologists.

Dr. George C. Shattuck of Boston, "Incidence of Tropical Diseases among Hospital Patients in Boston," before the American Society of Tropical Medicine.

The pleasure and profit to be derived in attending a Congress such as this comes only in a small degree from listening to scientific papers, but is in the mingling in close and genial fellowship of men from all over this country doing intensive work of the highest grade along special lines. Washington was crowded with physicians and scientists of every variety. As a result of the recent fire at the New Willard Hotel, which prevented the use of nearly 150 rooms, it was difficult to find quarters. The city was particularly beautiful. The new Lincoln Memorial in particular made the trip alone worth while. The hospitality of the physicians from the city of Washington itself was unbounded, and a particularly pleasant occasion was the lunch given at

the home of Dr. Charles W. Richardson by the Presidents of four or five well known societies, including Dr. Richardson himself.

Immediately following the Congress came the meeting of the National Tuberculosis Association. The Secretary of State, Mr. C. E. Hughes, gave an inspiring address before a large audience and which was followed by a scholarly presidential address by Dr. James W. Miller, the retiring President of the Association. The following men, physicians from this district, took part in the proceedings:

Dr. John B. Hawes, 2nd, read his paper on "The Problem of the Tuberculosis Suspect," before the Clinical Section and also opened the discussion of the Symposium of "Tuberculosis in Industry," in the Sociological Section. Dr. F. H. Hunt, resident physician of the Boston Sanatorium, spoke on "Chronic Tuberculosis in Children." Dr. Wm. R. P. Emerson of Boston spoke at the Symposium on "Nutrition" for the Sociological Section. Miss Bernice W. Billings of Boston, Secretary of the Nursing Section of this Association, took part in the discussion of the papers presented at this Section.

Other men from Massachusetts whose names do not appear in the program who were present are as follows:

Dr. Vincent Y. Bowditch of Boston, Dr. Walter Griffin of Sharon, Dr. Edward O. Otis of Boston; Dr. N. K. Wood of Boston, Dr. Sumner Remich of Boston, Dr. Olin S. Pettingill of the Essex Sanatorium in Middleton, Dr. Harry Wagner of the Barnstable Infirmary in Pocasset, Dr. E. B. Emerson of the Rutland State Sanatorium, and Dr. Henry B. Chadwick of the Westfield State Sanatorium.

THE SAMUEL FULLER MEMORIAL FUND.

The following subscriptions have been received to date, and are herewith gratefully acknowledged:

1. George Washington Gay, Boston..... $5.00
2. Charles Montraville Green, Boston.... 5.00
3. Robert Montraville Green, Boston..... 5.00
4. John Woodbury Stimson, Fitchburg... 5.00

Contributions to this fund in memory of the Pilgrim Physician should be sent to Dr. Robert M. Green, 496 Commonwealth Avenue, Boston.

LEGISLATIVE MATTERS.

House Bill No. 1655. This bill provides for the establishment of a department of administration and finance to be organized in three bureaus—a comptroller's bureau, a budget bureau, and a purchasing bureau. No supplies are to be purchased or contracted for by any State department unless approved by the State purchasing agent as being in conformity with the rules, regulations and orders made by the department of administration and finance. This department, under this act, would be given full authority covering the standardization of qualities, grades and brands of articles to be purchased, the use and disposal of the products of State institutions, and the disposal of obsolete, excess and unsuitable supplies "and other property" and the transfer of same to other departments. Rules, regulations and orders made by this department shall not restrict the several State departments, officers and commissions as to the quantity of supplies, etc., "except with respect to the time of purchase and the character, form, quality, grades and brands." This act deprives the institutions of the State of the power to determine what supplies are needed for their patients, and gives them no control over the quality, grade and amount of supplies purchased. The purchasing of supplies for the hospitals, charitable institutions, sanitaria, etc., of the Commonwealth would, in other words, be delegated to a clerk in this department, and be placed in the hands of persons who have had no experience in the management of hospitals or charitable institutions, and no knowledge of their needs. This would be a handicap on the institutions of Massachusetts which would inevitably result in a lowering of the standards of which the State has been proud for so many years.

Senate 486. Bill relative to an investigation by the Department of Mental Diseases of the mental condition of certain persons held for trial. New draft of Senate Bill 426 reported, ought to pass, by the Senate Committee on Ways and Means, and placed in the Orders of the Day for next session.

An Order was adopted in the House as follows: *Ordered*, That the Attorney-General be authorized and requested in his discretion to bring suit in behalf of the Commonwealth, in the name of the Commonwealth or otherwise, and in such court or courts as he may deem expedient, for the purpose of testing the constitutionality of the Act of Congress, approved November twenty-third, nineteen hundred and twenty-one, entitled, "An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy and for Other Purposes," known as the Sheppard-Towner Act, and to enforce and protect the rights and interests of the Commonwealth and its citizens as they may be affected thereby.

Correspondence.

THE PASSING OF THE MEDICAL RECORD.

Mr. Editor:

A statement that the passing of the Medical Record "means the end of independent medical journalism" has caused considerable criticism in the Medical Press. This statement, which was declared "absolutely false," was attributed to me in a letter to the New York Herald on April 22 over the signature of the A. R. Elliott Publishing Company. The communication from the Elliott Company was in reply to one from me to the New York Herald on April 20, 1922, in which, referring to the merger of the Medical Record and the New York Medical Journal, I said: "In the first place this means the end of independent *weekly* medical journalism in this part of the United States, if not throughout the country."

I am asking the publication of this "explanation" in the BOSTON MEDICAL AND SURGICAL JOURNAL as the New York Herald has ignored two requests to this effect. As to the charge of "absolute falsehood," I leave it to be placed where it belongs by any unprejudiced reader of my original communication and the perverted version of it to which I have called attention.

JOHN P. DAVIN, M.D.
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SUFFOLK DISTRICT MEDICAL SOCIETY.—The Research Club at the Harvard Medical School invites the members of the Suffolk District Medical Society to a special meeting to be conducted from 12.30 P. M. to 1.30 P. M., Friday, May 26, 1922, in the Amphitheatre of Building D, by Dr. S. P. Goodhart, Assistant Professor of Neurology at Columbia University, New York. The program is: (a) Demonstration by means of Moving Pictures of Some Rare Types of Nervous Diseases; (b) Analysis by Slow Motion Pictures of Motor Disorders in Nervous Diseases. (Bradykinetic Analysis.)